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PSITTACOSIS

A CLINICAL AND ROENTGENOLOGIC STUDY OF SEVEN CASES WITH POSTMORTEM OBSERVATIONS IN ONE CASE *

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Psittacosis, or "parrot fever," has been known for many years. Several excellent descriptions of the clinical picture and pathologic changes have been recorded during past epidemics.

The disease was first described by Ritter, who observed a house epidemic in Uster, Switzerland, in 1879. Three weeks after the arrival of parrots from Hamburg, the disease broke out. Seven people were taken sick and three died. Ritter describes the condition as a "pneumotyphus" from its resemblance to both pneumonia and typhoid.[1]

In 1892, an epidemic of infectious bronchopneumonia broke out in Paris among people who had been in contact with parrots recently arrived from South America. Dubief established the etiologic relationship between the diseased parrots and the human epidemic.[2] In 1893, Nocard described *Bacillus psittacosis* recovered from the bone marrow of a parrot that presumably had died from parrot fever.[3]

In 1896, Guilbert and Fournier recovered the same organism from a patient suffering from this disease.[2] Since that time *B. psittacosis* has for all practical purposes been considered to be the causative factor of parrot fever. Sacquépée, in 1907, showed that this organism belongs to the *Salmonella* group.[2]

Work carried on during the recent epidemic and epizootic both abroad and in this country seems definitely to have eliminated this organism as the cause of the disease.

The Parisian epidemic lasted from 1892 to 1895. Seventy-eight cases occurred with twenty-four deaths.[1] Since that time various epidemics have occurred in France, Italy and Germany.

The only epidemic described in the United States occurred in Wilkes-Barre, Pa., and was reported by McClintock. He describes sixteen cases with one death and gives the mortality rate as not being over 5 per cent. McClintock states that sick parrots arrived in Wilkes-Barre, March 2, 1917. Forty-eight parrots were sold and taken to houses; a number died, some recovered, some never appeared ill. After forty-eight hours the remaining parrots were shipped to another place. In about ten days the sick list of the store employees began to grow. These cases were at first variously diagnosed as influenza, pneumonia and typhoid.[4]

In January, 1929, a case of psittacosis was reported from the clinic of Dr. Joseph Sailer of Philadelphia. The patient had received an African parrot in July, 1928. It seemed to have a cold. The patient nursed it, allowed it to feed from her mouth, kissed it. August 26, the patient was taken sick with severe headache and fever, and, after having a typical course of the disease, recovered.[5]

The recent "epidemic" of psittacosis described in various cities in Germany,[6] England,[7] and the United States seems to be due primarily to South American parrots and parrakeets. Cases were seen in Cordoba, Argentina, in July and August, 1929. This city is a center for the parrot trade. Birds are brought there from the Amazon region in large numbers. The disease was first diagnosed bronchopneumonia, influenza and typhoid before the connection between the disease among the parrots, then raging, and the human cases was discovered.[8]

Following the appearance of cases in this country, investigation of the disease was started by the Hygienic Laboratory, Washington, D. C. The cases reported here represent laboratory infections occurring at this institution during the investigation.[9]

The laboratory established contact with infected parrots, Jan. 16, 1930. Nine days later, January 25, patient 1 was taken sick. Patient 2 was stricken, February 6. These two cases are readily explained by direct contact with infected parrots. Subsequent cases occurring at the Hygienic Laboratory—nine in number—are rather difficult to explain.

* From the U. S. Naval Hospital.

1. Siegmund, H.: Zur pathologischen Anatomie der Psittakosis, München. med. Wchnschr. **77**: 223 (Feb. 7) 1930.
2. Macaigne, M.: Nouveau traité de médecine, Paris, Roger, Widal et Teissier **1**: 306, 1920.
3. Rho, F.: Handbuch der Tropenkrankheiten, Leipzig, Carl Mense, 1924, p. 248.
4. McClintock, A. T.: Archives of the A. T. McClintock Memorial Foundation for the Study of Diseases of the Alimentary Canal **1**, 1925.
5. Clinic of Dr. Joseph Sailer, M. Clin. N. America, January, 1929, p. 1095.
6. Adamy, G.: Klinische Erfahrungen über die Papageienkrankheit (Psittakose), Deutsche med. Wchnschr. **56**: 217 (Feb. 7) 1930. Grunwald, G., and Meyer, F.: Klinische Beobachtungen bei der Papageienkrankheit, Deutsche med. Wchnschr. **56**: 174 (Jan. 31) 1930. Hegler, C.: Psittakose, Deutsche med. Wchnschr. **56**: 148 (Jan. 24) 1930.
7. Thompson, A. P., and Hillier, W. T.: Psittacosis, Lancet **1**: 396 (Feb. 22) 1930. Horder, T., and Gow, A. E.: Psittacosis, Lancet **1**: 442 (March 1) 1930.
8. Psittacosis in Argentina, editorial, Lancet **1**: 472 (March 1) 1930.
9. McCoy, G. W.: Accidental Psittacosis Infection Among the Personnel of the Hygienic Laboratory, Pub. Health Rep. **45**: 843 (April 18) 1930.

With regard to these cases, McCoy says:[9]

Two bacteriologists were engaged in the study of cultures derived from cases of psittacosis in man and those from healthy and from infected birds. One of these persons remained well while the other, who worked only with cultures in the third and fourth or later generations, developed the disease. None of these cultures was, or is, regarded as causative of the disease in birds or in man, and it is considered probable that the infection was derived from some source other than these cultures.

None of the eight remaining cases could be satisfactorily traced to any recognizable source of infection, as none of these individuals had anything to do with the work of psittacosis. As previously stated, they all worked in the building in which the psittacosis work was carried on, though that work was confined to certain rooms to which only those engaged on the problem had access. The usual safeguards employed in connection with studies of dangerous infections were observed throughout the study.

There were no good grounds for believing that any one of these eleven cases was due to contact with persons in the incubation stage of, or sick with, psittacosis. This view is strengthened by the fact that no case developed among members of families of victims or among persons caring for the sick.

Seven of the eleven cases were admitted to the U. S. Naval Hospital, Washington, D. C.

REPORT OF CASES

CASE 1.—A man, aged 42, white, laboratory assistant, was taken ill, Jan. 25, 1930, with pain in the back extending from the lumbar region to the shoulder blades. The next day he had a chill followed by fever, general malaise and headache. He was admitted to the hospital, January 27, suffering from severe parietal headache, pain in the back, abdominal distention and a slightly coated tongue. The lungs were clear; the urine was normal. Leukocytes numbered 7,550; band forms, 7 per cent; segmented, 60 per cent; lymphocytes, 23 per cent; eosinophils, 1 per cent; basophils, 2 per cent; monocytes, 7 per cent. A roentgenogram showed some enlargement of the bronchial root glands; otherwise the lung fields were essentially normal.

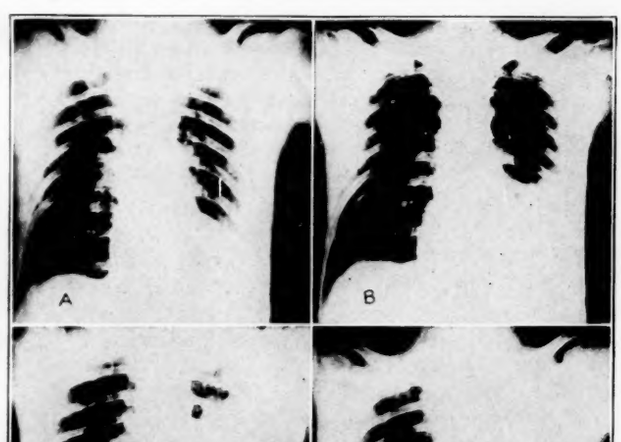

Fig. 1 (case 1).—*A*, shadow of specific exudate, left base; *B*, exudate has increased in area and density; *C*, specific exudate is now complicated by a typical lobar pneumonia in the left upper lobe; *D*, further complication in which the specific pneumonia has jumped to the right lower lobe.

January 28 it was reported that the patient perspired freely during the night. The temperature was 103 F. at 8 p. m.

January 29 the headache was more severe; a few moist crackles were heard over the left lower lobe posteriorly. The bowels were constipated; the patient's temperature was 103.8 F.; he slept very little during the night, and felt nauseated. Anorexia was marked.

January 30 the patient's temperature varied from 99 to 104.2 F. His appetite was better and he seemed somewhat more comfortable during the morning. Infiltration of the left lower lobe was more marked.

February 3 his general condition was worse. His temperature ranged from 102 to 104 F.; the pulse was up to 105; respiration ranged between 25 and 30. Headache persisted; anorexia was marked, accompanied by constipation and occasional vomiting. The patient had developed a cough with slight expectoration; he was somewhat drowsy and at times slightly irrational. There were signs of consolidation over the left lower lobe posteriorly. The urine was normal. The blood showed: leukocytes, 7,800; juveniles, 9 per cent; band forms, 31 per cent; segmented, 46 per cent; lymphocytes, 10 per cent; eosinophils, 0; basophils, 0; monocytes, 4 per cent.

A study of a roentgenogram taken February 4, compared with that taken February 2, showed the density of the consolidation of the upper portion of the left lower lobe to be about the same. The left base was beginning to clear, fully two interspaces. The patient was drowsy; his cough was more marked, with sticky mucoid expectoration. Dextrose was given intravenously. His temperature was between 103 and 104 F.; pulse, 90 to 110; respiration, 25 to 35.

February 5 he was very restless, at times irrational; his cough racking, the sputum sticky and slightly rusty. Dextrose was given intravenously.

February 6, the patient was stuporous with a temperature between 103 and 105.6 F.; pulse, 90 to 120; respiration, 30 to 35. There were crackles in the lower lobe of the right lung in addition to consolidation of the left lower lobe. The cough continued, the sputum, which was slightly rusty, sticking to the mucous membranes of the mouth and lips like glue. Dextrose was given intravenously. The roentgenogram, compared with that taken February 5, showed no change in the appearance of the left lung field. There was, however, a beginning pneumonic consolidation in the right lower lobe.

February 7 the stupor continued with the temperature between 102.4 and 104.6 F.; the pulse between 100 and 130; respiration, 30 to 40. The racking cough continued, with gluelike sputum. The blood showed: leukocytes, 8,700; myelocytes, 2 per cent; juveniles, 19 per cent; band forms, 36 per cent; segmented, 38 per cent; lymphocytes, 4 per cent; eosinophils, 0; basophils, 0; monocytes, 1 per cent. The roentgenogram showed that the pneumonic exudate had apparently spread throughout the left upper lobe, so that the entire left chest was opaque except for the two lower rib spaces at the left base. The pneumonic exudate involving the right lower lobe was more dense and had extended almost throughout the lobe.

February 8 the patient died at 6:15 a. m. A necropsy was held at 7 o'clock.

POSTMORTEM EXAMINATION

The body was fairly well nourished; the height was 65 inches (165 cm.); the weight, about 130 pounds (59 Kg.).

Brain.—The meninges were essentially normal. The superficial vessels showed only moderate congestion and the convolutional pattern was about normal. A section of the brain revealed strongly compressed ventricles and marked dilatation of the veins along the septum and the tela choroidea. There were some large ring hemorrhages in the caudate nucleus and multiple punctate hemorrhages in the corpus callosum, the retrolenticular portion of the internal capsule, and the putamen and thalamus; also rather large reddish dots about the aqueduct and the floor of the fourth ventricle.

Microscopic examination revealed circumscribed areas of degeneration of myelin with hemorrhage into the perivascular spaces, occurring particularly in the white matter, as seen in the corpus callosum and the pyramidal tract, base of the peduncle and superior cerebellar peduncle. These were not merely ring hemorrhages around some of the small blood

vessels but fairly large sized areas filling up at least the high power field of the microscope, and there was some infiltration of phagocytic cells and also of occasional lymphocytes and here and there a polymorphonuclear leukocyte. The red blood cells showed degeneration of varying degree, sometimes being quite well preserved, at other times being completely degenerated. Some of the areas were probably older than others, to judge from this appearance of the red cells, but they seemed to present some fairly unusual features in that they were not merely terminal hemorrhages produced by pressure. The hemorrhages had a tendency to be elongated in the direction of the nerve fibers in which they occurred and sometimes presented a zone of fairly complete necrosis in the center. The brain weighed 1,205 Gm.

Thorax.—The lung surfaces were free from exudate or adhesions and were reddish gray. Both lobes of the left lung and the lower right lobe were consolidated. The upper and middle right lobes were crepitant. On section the consolidated lobes were reddish gray and of a moist, somewhat gelatinous and mottled appearance. The consolidation was more uniform than in lobular pneumonia, but less dense and uniform than in the lobar type.

Microscopically, the alveolar epithelium of the consolidated lobes was hyperplastic with active desquamation into the alveoli. The character of the alveolar exudate varied somewhat with the age of the process. In the lower left lobe, the first lobe to become consolidated, the alveoli contained a well marked serous exudate, a fair number of well preserved erythrocytes and from few to many large mononuclear cells with broad, lightly basophilic, highly vacuolated cytoplasm, the vacuoles being filled with fat droplets. These cells are phagocytic, containing cellular débris and it is in these cells and similar large mononuclear cells in the alveolar wall that Lillie[10] has reported finding inclusion bodies which he has termed *Rickettsia psittaci* and described as "minute gram-negative intracellular coccoid and bipolar bacilliform bodies of about 0.2 micron to 0.3 micron diameter, found in reticuloendothelial cells, mesothelial cells, and large mononuclear cells of the parrot and in large mononuclear cells in man, associated with, but without established relationship to, psittacosis." No other types of organisms were seen in the exudate. The bronchial epithelium was intact and the bronchi contained serous exudate and large mononuclear cells of the type found in the alveoli. There was a moderate lymphocytic and plasma cell infiltration of the vessel and bronchial sheaths. In the upper left lobe and especially in the right lower lobe, the last to be involved, the exudate became fibrinous, and fairly large numbers of polymorphonuclear leukocytes appeared in the alveoli. The exudate consisted also of large numbers of well preserved red blood cells and less numerous large mononuclear cells. The bronchi contained a serofibrinous exudate with pus and mononuclear cells. The middle and upper right lobes showed some edema and a few pus cells in the bronchi. The lymph nodes at the roots of the lungs were hyperplastic with some large mononuclear cells in the sinuses. The left lung weighed 980 Gm., the right lung 570 Gm.

Fig. 2 (case 1).—Left lung showing consolidation.

Heart.—The heart was normal in size and position. The pericardium was normal. The heart muscle was approximately normal in color and consistency. The valves were normal. The aorta and coronaries were normal. Measurements: left ventricular wall, 2 cm.; right ventricular wall, 0.8 cm.; mitral valve, 9 cm.; aortic valve, 7 cm.; pulmonary valve, 7 cm.; tricuspid valve, 12 cm. The weight was 260 Gm.

Microscopically there was some fragmentation and granular degeneration of the muscle fibers and mild lipochrome pigmentation near the nuclei.

Abdomen.—There was moderate subcutaneous and intra-abdominal fat. The peritoneum was smooth and glistening.

Liver.—This was somewhat enlarged and lay 13 cm. below the tip of the ensiform cartilage and 4 cm. below the costal margin in the right mammary line. It was deep reddish brown, with a smooth surface. On section the organ cut with normal resistance and the cut surface was reddish brown with indistinct lobular markings. The gallbladder and ducts were normal. The weight was 1,700 Gm.

Microscopically there was well marked focal necrosis, which was both central and midzonal in distribution. In these areas the polygonal cells were in various stages of degeneration from granular, fatty cytoplasm with distorted, pyknotic nuclei to complete disappearance of the nuclear structure. In some focal lesions the cells were irregularly stellate or polygonal with coarsely vacuolate or opaque cytoplasm and elongate or rounded leptochromatic vesicular nuclei with small nucleoli and occasional multinucleated giant cells with peripherally placed oval, or angulate dumb-bell shaped leptochromatic vesicular nuclei. There was a well marked polymorphonuclear leukocytic infiltration into the degenerated areas. No marginal proliferation of either liver cells or interstitial tissue was present. No organisms or inclusion bodies were found.

Spleen.—This weighed 126 Gm. and was of a dark color. On section the pulp was soft and dark red. Microscopically the malpighian corpuscles were about normal. The sinuses were filled with blood, and numerous large mononuclear cells and plasma cells were present. Considerable numbers of polymorphonuclear leukocytes were seen in scattered areas.

Pancreas.—This was essentially normal; it weighed 65 Gm.

Kidneys.—These were similar. They were approximately normal in size and a deeper red than normal. The capsules were smooth, stripped easily and left a deep red smooth surface. On section, considerable congestion was noted.

Microscopically the glomeruli were congested and the capsular spaces contained some serous and amorphous granular exudate. The epithelium of the convoluted tubules was somewhat swollen and granular, with amorphous granular exudate in the lumen. The left kidney weighed 155 Gm.; the right, 145 Gm.

Suprarenals.—These weighed 15 Gm. each. Microscopically the cortical cells in some areas were coarsely vacuolated. The vacuoles failed to take the fat stain and appeared to be hydropic in type. One large area in the cortex showed marked coagulation necrosis without marginal proliferation. There was some lymphocytic infiltration in the medulla.

Gastro-Intestinal Tract.—This was essentially normal. There were some areas of moderate gaseous distention in the cecum and transverse colon. Microscopically, nothing of significance was noted.

Bladder and Prostate.—Both were essentially normal.

10. Lillie, R. D.: Psittacosis: Rickettsia-Like Inclusions in Man and in Experimental Animals, Pub. Health Rep. 45:773 (April 11) 1930.

Rib Marrow.—This was somewhat hypoplastic, especially as regards the number of polymorphonuclear leukocytes.

The special histopathologic features in this case are: an unusual type of pneumonic consolidation, lobar in distribution, more uniform than bronchopneumonia, but less dense and uniform than lobar pneumonia, with less fibrin and pus cells and with a cellular alveolar exudate consisting predominantly of large mononuclear cells, which occasionally contained inclusion bodies; focal necrosis of the liver with the presence of large cells, often multinucleated of unusual type; areas of degeneration with hemorrhage around the perivascular spaces, in the white matter of the brain, occurring particularly in the corpus callosum and in the long tracts.

CASE 2.—A man, aged 43, white, a research worker, was taken ill, Feb. 6, 1930, with a peculiar tenderness of skin. During the day he had a couple of chilly sensations, felt faint and nauseated, and developed a slight headache. Next afternoon he had a temperature of 102 F.

February 8 he was admitted to the hospital suffering from slight shooting pains in the frontal region. His temperature was 102.8 F. There were a few moist crackles in the left lower lobe below the angle of the scapula. The tongue was clear, the abdomen slightly distended. Blood examination showed: leukocytes, 7,350; juveniles, 7 per cent; band forms, 25 per cent; segmented, 41 per cent; lymphocytes, 20 per cent; eosinophils, 0; basophils, 2 per cent; monocytes, 5 per cent. The urine was normal. A roentgenogram revealed some enlargement of the bronchial root glands, and possibly the mediastinal glands, associated with some prominence of the lung markings extending downward into both bases and along the perivertebral trunks into both tops; the basal lung markings were somewhat fuzzy in outline and there was considerable beading in the left lower lobe; there was a soft shadow located in the upper portion of the left lower lobe, at the axillary margin. The postero-anterior view showed a cloudiness in the same area but was of a greater extent than in the anteroposterior view. The plates were suggestive of a beginning pneumonic exudate involving the upper portion of the left lower lobe.

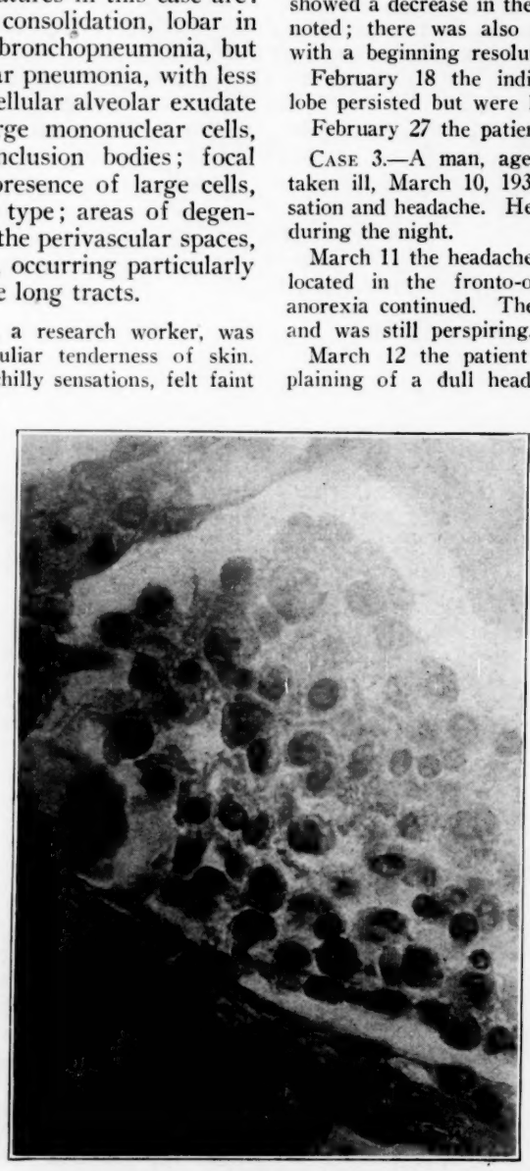

Fig. 3 (case 1).—Lung showing alveolar exudate; reduced from a photomicrograph with a magnification of 1,290 diameters.

February 9 the temperature was 103.4 F. Twenty cubic centimeters of convalescent serum was given intramuscularly.

February 10 the temperature was 102.4 F. The urine showed albumin 2 plus. Twenty cubic centimeters of convalescent serum was given intramuscularly in the morning and 75 cc. intravenously in the afternoon.

A study of the roentgenogram taken February 11 compared with that taken February 10 failed to show any increase in the area of pneumonic exudate, previously noted. There was, apparently, some decrease in the density. The remaining portions of both lung fields were negative for exudate.

February 12 the temperature was 101 F. Ninety cubic centimeters of convalesment serum was given intravenously. The area below the angle of the left scapula gave definite evidences of infiltration with increased voice sounds, slight impairment of resonance and many moist crackles. The liver descended one inch.

February 13 the patient's temperature was normal, the urine was normal and he felt well. Blood examination showed: leukocytes, 8,500; band forms, 10 per cent; segmented, 63 per cent; lymphocytes, 23 per cent; easinophils, 2 per cent; basophils, 0; monocytes, 2 per cent. The roentgen examination showed a decrease in the area of pneumonic exudate previously noted; there was also a decrease in the density, consistent with a beginning resolution.

February 18 the indications previously noted in the left lobe persisted but were less marked.

February 27 the patient was discharged.

CASE 3.—A man, aged 48, white, a research worker, was taken ill, March 10, 1930, with loss of appetite, a chilly sensation and headache. He slept poorly and sweated considerably during the night.

March 11 the headache was still present although not severe, located in the fronto-orbital region. General malaise and anorexia continued. The patient had a temperature of 101 F. and was still perspiring.

March 12 the patient was admitted to the hospital, complaining of a dull headache, fever and perspiration, loss of appetite, general weakness and photophobia. Physical examination revealed little except a few bubbling râles in the right lower lobe posteriorly, slight abdominal distention and chalky white tongue with red borders. The temperature was 102 F. The urine was normal. Blood examination showed: leukocytes, 12,800; band forms, 4 per cent; segmented, 68 per cent; lymphocytes, 15 per cent; eosinophils, 2 per cent; basophils, 1 per cent; monocytes, 10 per cent. A roentgenogram showed a slight enlargement of the bronchial root glands associated with some prominence of the lung markings, extending downward into both bases; there was evidence of a pneumonic patch, left lower lobe, eighth interspace, axillary margin, this patch occurring as a faint cloud more or less circular and lacking the mottled appearance of an ordinary beginning bronchopneumonia; the lateral projection of the chest also shows the pneumonic patch.

March 13, 80 cc. of convalescent serum was given intravenously.

March 14, 60 cc. of convalescent serum was given intravenously. Blood examination showed: leukocytes, 5,900; juveniles, 2 per cent; band forms, 14 per cent; segmented, 70 per cent; lymphocytes, 10 per cent; eosinophils, 0; basophils, 0; monocytes, 4 per cent. At the angle of the scapula, left lower lobe, there was a slight increase in voice sounds with a few moist crackles.

March 15, 40 cc. of convalescent serum was given intravenously. The urine showed a trace of albumin. The temperature was 103.6 F. The area of exudate in the lungs was creeping higher.

March 16, 45 cc. of convalescent serum was given intravenously.

A roentgenogram taken March 17 compared with the last one previous showed evidence of a slight increase in the area of exudate, which was creeping higher. The exudate now occupied practically the fifth, sixth, seventh and eighth interspaces beneath the scapula. The exudate seemed a trifle more dense. There was the usual slight daily increase of the left costophrenic angle. It was now clear about a space and a half.

March 18 the temperature was 102 F. and the tongue was still coated. The abnormal condition of the lungs was less marked and the patient felt better.

March 20 the temperature was normal; the urine also was normal.

March 24 the temperature remained normal all day. Blood examination showed: leukocytes, 8,100; band forms, 6 per cent; segmented, 67 per cent; lymphocytes, 19 per cent; eosinophils, 3 per cent; basophils, 0; monocytes, 5 per cent. A roentgenogram of the chest, compared with the one last previous, revealed that, allowing for the slight breathing, there was a faint shadow remaining in the seventh and eighth interspaces, axillary margin, left side.

April 3 the patient was discharged.

April 10 he was readmitted to the hospital, suffering from practically the same symptoms as on previous admittance. His temperature was 101.5 F.; pulse, 100; respiration, 20. Physical examination revealed little except a slightly coated tongue. Roentgen observations were negative. Blood examination showed: leukocytes, 8,800; band forms, 7 per cent; segmented, 50 per cent; lymphocytes, 31 per cent; monocytes, 12 per cent.

April 11 the temperature was 101 F. Blood examination showed: leukocytes, 6,800; juveniles, 2 per cent; band forms, 12 per cent; segmented, 58 per cent; lymphocytes, 20 per cent; eosinophils, 2 per cent; monocytes, 6 per cent.

April 22 the temperature was normal and the patient felt better.

April 29 the patient was discharged. No abnormal physical conditions had been present except a coated tongue, some elevation of temperature and a shift to the left in the neutrophils.

CASE 4.—A man, aged 26, white, a medium maker, was taken ill, March 12, 1930, with a haziness in front of the eyes followed in half an hour by severe headache across the forehead and pain in eyes, as well as a chilly sensation. He was troubled by insomnia and perspiration during the night.

March 13 the headache was still present; the temperature was 102.2 F. at noon.

March 14 the patient was admitted to the hospital suffering from headache, weakness, loss of appetite, nausea, attacks of perspiration and constipation. His temperature was 104 F. Many fine moist crackles were heard in the extreme base of left lower lobe in the anterior axilla. The heart was enlarged—athletic heart; the sounds were of good quality. The blood pressure was 150 systolic, 85 diastolic. The abdomen was slightly distended; the liver and spleen were not palpable. The skin was clear and the tongue practically clean. A roentgenogram of the chest, taken at two meters, showed a definite pneumonic exudate in the left costophrenic sulcus, including the ninth and tenth interspaces. The outline of the left diaphragm could be distinctly seen; therefore the shadow was believed to be an exudate rather than a transudate. The appearance of the shadow strongly suggested the specific pneumonia of psittacosis. With the exception of some prominence of the basal lung markings, the remaining portions of both lung fields were not remarkable. Blood examination showed: leukocytes, 7,750; juveniles, 4 per cent; band forms, 12 per cent; segmented, 69 per cent; lymphocytes, 12 per cent; eosinophils, 0; basophils, 0; monocytes, 3 per cent. Urinalysis showed slight albuminuria. Sixty cubic centimeters of convalescent serum was given intravenously.

March 15, 40 cc. of convalescent serum was given intravenously.

Fig. 4 (case 1).—Liver showing focal necrosis; reduced from a photomicrograph with a magnification of 300 diameters.

March 16 the previous area of infiltration in the left lower lobe had cleared, but posteriorly in the sixth, seventh and eighth interspaces of the same lobe, voice sounds had increased and numerous moist crackles were heard. The temperature was 104.8 F. The tongue had a white chalky appearance at the base. Headache was less marked. Forty-five cubic centimeters of convalescent serum was given intravenously.

March 17, 50 cc. of convalescent serum was given intravenously. A roentgenogram, when compared with the preceding one, showed that the exudate had moved a space higher, beneath the scapula; the density was approximately the same; there were two clear spaces at the costophrenic angle; there appeared to be an increase in the left border of the heart shadow, associated with a prominence in the region of the pulmonary conus; a suspicious spot appeared beneath the right scapula.

The clinical picture on March 18 was that of a very ill man. The temperature was 104.6 F. Headache was quite severe, constipation very obstinate and abdominal distention marked. The patient was perspiring freely. The left lower lobe showed the typical signs of consolidation. Seventy-five cubic centimeters of convalescent serum was given intravenously.

March 19 the urine showed albumin, 1.2 per cent; casts and red blood cells were present. A roentgenogram compared with the preceding one showed relatively no change in the distribution of the exudate beneath the left scapula. There was a suspicious spot beneath the right scapula.

March 20 the patient felt much better. His temperature was 102.8 F.; headache had disappeared; the tongue was dirty brown in the anterior half but chalky white in the posterior half; the edges were red. The left lower lobe posterior gave the signs of consolidation; also areas of increased voice sounds with numerous crackles in the upper mesial part of the right lower lobe. Fifty-five cubic centimeters of convalescent serum was given. Blood examination showed: leukocytes, 8,400; juveniles, 4 per cent; band forms, 18 per cent; segmented, 62 per cent; lymphocytes, 9 per cent; eosinophils, 1 per cent; monocytes, 6 per cent.

March 23 the temperature was normal.

March 24, blood examination revealed: leukocytes, 7,300; band forms, 6 per cent; segmented, 63 per cent; lymphocytes, 23 per cent; eosinophils, 4 per cent; monocytes, 4 per cent. The urine showed albuminuria 3 plus, also rare casts and red blood cells.

March 28 a few signs of infiltration were present in the left lower lobe; the right lung was clear. The urine was negative for albumin; showed rare casts, but no red cells.

April 5 the patient was discharged.

CASE 5.—A man, Negro, aged 48 years, a cleaner, was taken ill March 13, 1930, with a chill followed by fever and intense headache. He had been restless during the night.

March 14 the patient was admitted to the hospital, suffering from headache, fever, loss of appetite and insomnia. His temperature was 103.4 F.; pulse, 90; respiration, 18. Physical examination revealed a roughened first sound over the aortic area; the lungs were clear; the liver had descended one inch; the spleen was not palpable; the tongue had a white chalk-like coat with the edges red. Leukocytes numbered 9,000; band forms, 19 per cent; segmented, 64 per cent; lymphocytes, 16 per cent; eosinophils, 0; monocytes, 1 per cent. Seventy-

five cubic centimeters of convalescent serum was given intravenously. A roentgenogram revealed some prominence of the basal lung markings; the anterior posterior view of the chest failed to show any evidence of a beginning pneumonic exudate; the posterior anterior view showed a spot in the ninth interspace, posteriorly, partly obscured by the heart apex. This shadow suggested the specific pneumonia of psittacosis.

March 15 the temperature was 105 F. The urine showed albumin, one plus. Sixty cubic centimeters of convalescent serum was given intravenously.

March 16 the temperature was 103.4 F. Headache was still present and the appetite was poor. Forty-five cubic centimeters of convalescent serum was given intravenously.

March 17 a distinct patch of infiltration had developed in the left lower lobe in the eighth and ninth interspaces posteriorly showing increased voice sounds, bronchovesicular breathing and moist crackles. A few râles were also heard in the anterior axillary line, right lower lobe. The temperature was 104.2 F. The abdomen was distended. A roentgenogram, compared with the preceding one, showed the specific exudate to be more distinctly outlined and to have increased in density; the costophrenic sulcus was clear, two spaces.

March 20 the temperature was 104 F. Headache persisted; constipation was marked, as well as abdominal distention; the tongue had a chalklike coat, with edges red. The patient appeared to be very toxic. There was a definite involvement of both lower lobes. Examination of the urine showed albumin, 0.7 per cent; also several casts and leukocytes. Blood examination revealed: leukocytes, 7,050; juveniles, 5 per cent; band forms, 30 per cent; segmented, 52 per cent; lymphocytes, 13 per cent; eosinophils, 0. Fifty cubic centimeters of convalescent serum was given intravenously. A roentgenogram showed relatively no change in the left base. There was, however, a beginning pneumonic exudate in the right middle lobe, which was extending outward from the hilus and along the interlobar septums, behind the angle of the right scapula.

March 21 the temperature was 104.4 F. The abdomen was distended. A few extrasystoles had developed. One hundred cubic centimeters of convalescent serum was given intravenously. A roentgenogram, compared with the preceding one, showed slight regression of the specific exudate at the left base. There was an extension of the pneumonic exudate at the right base. The entire right middle lobe was now consolidated, and there was a probable beginning extension to the right lower lobe.

March 24 the temperature was 105.2 F.; pulse, 104; respiration, 35 to 40. The patient acted somewhat stuporous. He had a slight unproductive cough and his tongue was chalklike. The left lower, right middle and right lower lobes were now involved. One hundred cubic centimeters of convalescent serum was given intravenously.

March 25 the highest temperature reached during the day was 103 F. The patient perspired freely at intervals. His general condition seemed somewhat better, but he was still apathetic. He had never been restless since entering the hospital but had always lain quietly. One hundred cubic centimeters of convalescent serum was given intravenously.

March 26 the temperature was 103 F.; pulse, 105; respiration, 40. The patient appeared to be very toxic; he had a marked circumoral tremor and was very weak. An unproductive cough continued. Uranalysis showed albumin, 2 per cent; also many casts. One hundred cubic centimeters of convalescent serum was given intravenously.

March 31 the temperature dropped to 101.5 F.; the pulse was 84; respiration was 34. The patient felt better. Abnormal conditions in the lungs were less pronounced. Increased voice sounds under the angle of the left scapula and in the upper right axillary region were noted, with many crackles over both lower lobes posteriorly. A roentgenogram, when compared with the preceding one, was unsatisfactory because of rapid breathing. There was, however, a definite difference between the two lung fields; from the right diaphragm to the interlobar septums between the right upper and middle lobes the lung was distinctly cloudy, as compared with the left lung fields.

April 4 the temperature was 98.6 F.; pulse, 84; respiration, 25. The patient was feeling much better but was still weak. Leukocytes numbered 7,600; band forms, 0; segmented, 75 per cent; lymphocytes, 20 per cent; eosinophils, 2 per cent; monocytes, 3 per cent.

April 8 the temperature continued normal. The patient ate with distinct relish.

April 30 the patient was discharged.

CASE 6.—A man, aged 58, white, a research worker, was taken ill, March 13, 1930, with a slight rise in temperature, 100.4 F., and a peculiar feeling of uneasiness.

March 14, his temperature was 102.5 F., and he noticed a slight uneasiness in his chest.

March 15 the patient was admitted to the hospital with a temperature of 103.5 F. with no other symptoms than uneasiness in the chest. There was no complaint of headache, cough, perspiration or coated tongue. A few moist crackles were heard over the lower lobe of the left lung two spaces below the angle of the scapula. Leukocytes numbered 9,300; band forms, 12 per cent; segmented, 70 per cent; lymphocytes, 9 per cent; eosinophils, 0; basophils, 0; monocytes, 9 per cent. The urine was normal. Seventy-five cubic centimeters of convalescent serum was given intravenously. A roentgenogram taken at the standard two meter distance showed the heart shadow central, within the normal limits of size. The ascending and horizontal aortic arch was elongated. There was evidence of a definite pneumonic exudate at the left base, which from its location, general contour and density was characteristic of the specific pneumonia of psittacosis. The remaining portions of both lung fields were normal.

March 16 the temperature was 103.8 F. The tongue was slightly coated. Forty-five cubic centimeters of convalescent serum was given.

March 17 the temperature was 103 F. Examination of the urine showed albumin 3 plus. Fifty cubic centimeters of convalescent serum was given.

March 18 the temperature was 102.6 F. The urine showed albumin, 0.5 per cent. Examination of the blood showed: leukocytes, 5,250; juveniles, 2 per cent; band forms, 19 per cent; segmented, 60 per cent; lymphocytes, 13 per cent; eosinophils, 0; basophils, 0; monocytes, 6 per cent. Under the angle of the left scapula a small area with increased voice sounds and a few crackles was noticed. Seventy-five cubic centimeters of convalescent serum was given intravenously.

A roentgenogram of the chest, compared with the one preceding, showed the exudate less clearly defined. It had apparently ascended one space, beneath the scapula, with corresponding clearing of two spaces in the left costophrenic sulcus.

March 20 a roentgenogram, compared with the one preceding, showed a decrease in area of density of exudate.

March 22 the temperature was normal; the urine also was normal. Leukocytes numbered 5,400; band forms, 5 per cent; segmented, 58 per cent; lymphocytes, 23 per cent; eosinophils, 3 per cent; monocytes, 11 per cent.

A roentgenogram, March 25, compared with the one preceding, showed the exudate beneath the left scapula to have disappeared. Practically no other abnormal conditions in the lung were revealed.

April 2 the patient was discharged.

April 20 he was readmitted to the hospital on account of a rise of temperature to 102 F. There were no other symptoms, except slight pain in the left groin. Physical examination showed nothing. Roentgen examination of the chest was negative. Examination of the blood revealed: leukocytes, 5,100; juveniles, 2 per cent; band forms, 18 per cent; segmented, 61 per cent; lymphocytes, 13 per cent; monocytes, 6 per cent.

April 4 the temperature was normal. Leukocytes numbered 4,300; band forms, 10 per cent; segmented, 60 per cent; lymphocytes, 21 per cent; eosinophils, 1 per cent; monocytes, 8 per cent.

April 14 the patient was discharged.

CASE 7.—A man, aged 32, Negro, a cleaner, was taken ill, March 15, 1930, feeling cold and chilly all day and developing a severe headache toward evening.

March 17 he was admitted to the hospital with a temperature of 103.2 F., pulse 100 and respiration 20, suffering from headache and loss of appetite. Physical examination revealed a slightly coated tongue, whitish toward the base, with red edges; the fauces slightly injected, and the lungs normal. The abdomen was normal; the liver and spleen were not palpable. The skin was clear. The leukocytes numbered 7,500; juveniles, 4 per cent; band forms, 18 per cent; segmented, 48 per cent; lymphocytes, 16 per cent; eosinophils, 0; basophils, 0; monocytes, 14 per cent. A roentgenogram of the chest showed a definite globular pneumonic exudate at the axillary margin of the left base consistent with the specific pneumonia of psittacosis. The heart shadow was central, within the upper limits of size.

March 18 the temperature was 100.8 F. Headache was less marked. A few moist crackles were heard over both bases posteriorly, particularly on the left, where they extended between the angle of the scapula and the axilla. The patient had developed a slight, unproductive cough. Examination of the urine was 3 plus positive for albumin.

March 19 a roentgenogram, compared with the preceding one, showed an extension of the exudate beneath the left scapula. The costophrenic sulcus was clear one space. There was a definite beginning exudate in the right lower lobe at the eighth interspace.

March 20 the temperature was 102.6 F. The tongue had a whitish brown coat. Fifty cubic centimeters of convalescent serum was given intravenously.

March 21 the temperature was 102.8 F.; pulse, 104; respiration, 24. Leukocytes numbered 7,300; juveniles, 2 per cent; band forms, 13 per cent; segmented, 60 per cent; lymphocytes, 20 per cent; monocytes, 5 per cent. The urine showed albumin 0.6 per cent. One hundred cubic centimeters of convalescent serum was given intravenously. A roentgenogram of the chest, compared with the one preceding, showed no change in the left base. There was a slight increase in the size of the exudate, at the right base; it now occupied two full spaces. There was also some slight increase in density.

March 24 the temperature was normal and the patient felt better. The left lower lobe was clearing up but at the base of the right lower lobe toward the axilla the increased voice sounds persisted, with moist crackles.

March 27 the urine was practically normal. A roentgenogram of the chest showed the exudate at the right base, to have practically disappeared.

March 29 observations of the lungs revealed practically no abnormal condition.

April 5 the patient was discharged.

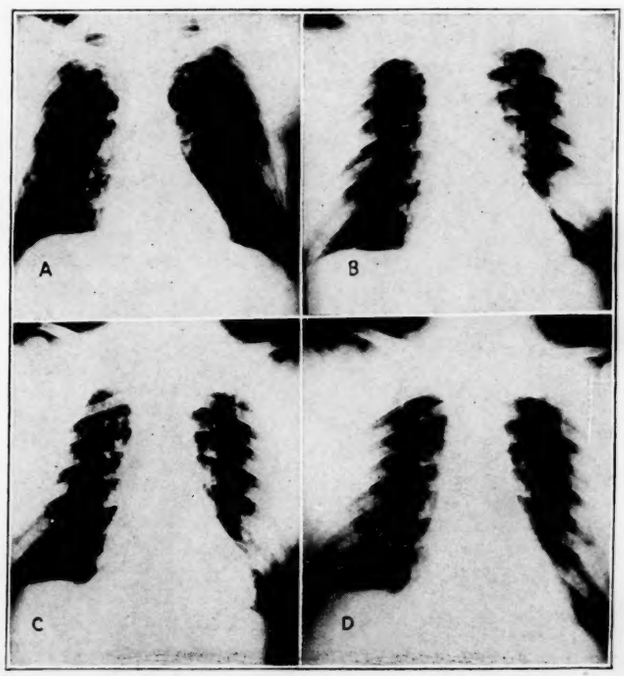

Fig. 5 (case 2).—*A*, characteristic shadow of the specific creeping pneumonia of psittacosis, left lower lobe; *B*, the shadow has reached its maximum size and density; *C*, the specific exudate has started to creep upward beneath the angle of the left scapula, leaving clear lung behind; *D*, resolution of the exudate has commenced.

SYMPTOMS IN GENERAL

After an incubation period of from eight to ten days the disease begins to manifest itself. The first symptom is usually a chill or sense of chilliness, soon followed by a distinct rise in temperature. Headache may come on during the first day and persist for several days. One of our patients did not experience any headache. Perspiration is the rule during the first week of illness. Appetite is commonly lost. The tongue becomes coated early; the center of the tongue may be chalky white and the edges red; the coat sometimes is brownish. Abdominal distention is common, often associated with constipation.

The severity of the disease is definitely associated with the degree of lung involvement, which apparently is the determining factor in the development of the toxemia.

When the lung involvement is comparatively small the patient is not very sick. The infiltration is then as a rule confined to one lobe; the patch involved is small, but the lesion creeps along from one part of the lobe to another, the areas previously involved clearing up. It finally seems to find its definite place, where it remains sometimes for a long period before complete resolution takes place.

In these mild cases respiration seldom goes over 24 a minute, and the pulse is definitely below 100, often between 80 and 90 in spite of the fact that the temperature may rise to 103.5 F.

In the more severe cases a whole lobe or, indeed, two or more lobes may become involved. In these cases the picture may resemble that of lobar pneumonia with rather rapid breathing, cough and expectoration of rusty sputum. Our cases 1 and 4 would come in this group. Other cases may resemble typhoid, with marked weakness, apathy, tremors and subsultus tendinum. Case 7 would fall in this group.

Headache and abdominal distention are important symptoms in the severe cases. Perspiration is a pronounced feature throughout the disease. The spleen could not be palpated in any of the cases. The liver descended from one to two finger-breadths below the costal margin in cases 1, 2 and 5.

Relapses do occur. In our series, patients 3 and 6 were readmitted to the hospital, suffering from the same symptoms as on previous admission but in a milder form. None of them showed any pulmonary involvement. Fall in temperature and recovery occurred within a few days.

ROENTGENOLOGIC OBSERVATIONS

A complete roentgenologic study was made of all the cases in this series. Plates were taken daily, and the progress of the specific creeping pneumonia was carefully noted.

The characteristic features of this specific exudate were, first, a small, faint, circular cloud of equal density. Gradually this cloud enlarged, reaching its maximum size and density (of about four rib spaces) on the third or fourth day. In our series, the exudate occurred at the base of the left lower lobe in every case. The homogeneous density, contour, and location

of the exudate differed from that of any pneumonic consolidation previously observed by us. There was an absence of the mottling of bronchopneumonia. The shadow was less opaque than in a typical lobar pneumonia and differed in contour from a typical infarct. There is something about the character of the exudate that distinguishes it from a possible new growth. Another characteristic feature in every case, as the disease progressed, was the migration or creeping upward of the exudate beneath the scapula, leaving normal lung tissue behind.

The tendency of the disease was to jump to the opposite base, where it progressed through a characteristic cycle, appearing as a circular cloud, enlarging, increasing in density and after the fourth or fifth day starting to creep upward beneath the scapula, leaving clear lung behind; while the primary lesion in the opposite base had gradually faded out, leaving normal lung tissue behind.

Roentgenologic diagnosis of the specific creeping pneumonia of psittacosis was made from the first plates taken on admittance of every patient, with the exception of patients 1 and 2.

The roentgenologic observations were the determining factors in the early diagnosis and treatment of the disease.

LABORATORY OBSERVATIONS

The laboratory observations were consistent in all cases with regard to both positive and negative results.

An absence of leukocytosis was a feature in all cases. This was associated with a distinct shift to the left of the neutrophils. This shift reached its maximum during the height of the disease and was accompanied by a distinct fall in the number of lymphocytes and absence of eosinophils. With the occurrence of lysis and general improvement, a normal distribution rapidly established itself.

In all cases except case 1, an albuminuria was present; case 7 at one time showed 2 per cent albumin in the urine. A few hyaline and granular casts were the rule.

Repeated blood cultures were negative in all cases. Cultures of feces and urine have failed to show any pathogenic organisms.

Agglutination tests for *Bacillus typhosus, B. paratyphosus* A, *B. paratyphosus* B, *B. psittacosis, Brucella melitensis, Brucella abortus, Bacterium tularense, Proteus* X 19 and *Bacillus aertrycke* were negative in all cases with the following exceptions: Case 1 showed a positive agglutination to *B. psittacosis* in a dilution of 1:20 on the day of admittance to the hospital. A second test was negative, however. Case 6 showed a positive agglutination to *Brucella abortus* in a dilution of 1:40, and partial agglutination to *Brucella melitensis* in a dilution of 1:40 as well as a positive agglutination to *Bacterium tularense* in a dilution of 1:40. This patient had had both undulant fever and tularemia in the past.

In view of the foregoing negative results one feels inclined to agree with those who believe that *B. psittacosis* plays no part in the etiology of parrot fever. Investigations by Armstrong, McCoy and Branham [11] of the Hygienic Laboratory during the recent epidemic seem to point to a filtrable virus as the causative agent, a conclusion also reached by other investigators.[12]

11. Armstrong, C.; McCoy, G. W., and Branham, S. E.: Filtrability of the Infective Agent of Psittacosis in Birds, Pub. Health Rep. **45**: 725 (April 4) 1930.

12. Bedson, S. P.; Western, G. T., and Simpson, S. L.: Observations on the Etiology of Psittacosis, Lancet **1**: 235 (Feb. 1) 1930.

DIAGNOSIS

The important features from a diagnostic point of view are: history of exposure, chill or chilliness followed by fever, headache, loss of appetite, and abdominal distention; the presence of a white coated tongue with red edges; a rather slow pulse with a temperature sometimes reaching 103 F.; definite physical indications of pulmonary infiltration, particularly brought out by roentgenogram; absence of leukocytosis with a marked shift to the left in the neutrophils; and practical absence of cough, sputum and pain in the chest in spite of more or less marked lung involvement.

As to differential diagnosis, influenza is probably the disease most difficult to differentiate from psittacosis. The presence of other cases at the same time, the lack of exposure to sick parrots, and a more rapid onset with more definite symptoms referable to the respiratory tract would help to differentiate. Roentgenologic observations of the lungs would differ from those of parrot fever.

The frank pneumonias give an entirely different clinical picture. Pain in the chest, cough and expectoration of rusty sputum early in the disease with pulmonary consolidation, rapid pulse, rapid respiration, leukocytosis and the presence of pneumonococci in the sputum would establish the diagnosis.

An atypical pneumonia, however, with low leukocyte count and absence of pronounced pulmonary symptoms would be more difficult to differentiate. The absence of exposure, however, coupled with the roentgenologic examination, would help to make a diagnosis.

Typhoid would have to be considered during the height of the disease in certain cases. But culture of the stool, urine and blood should give the offending organism. The Widal agglutination test would become positive in higher and higher dilutions.

TREATMENT

Treatment employed has been largely symptomatic coupled with alkalization and forcing of fluids, including orange juice and dextrose. Various enemas were used for abdominal distention.

In addition, the last six patients received various amounts of immune serum. This was tried at the suggestion of Assistant Surgeon General A. M. Stimson of the U. S. Public Health Service. The serum was collected from convalescent patients through the efforts of Drs. R. R. Spencer and L. F. Badger of the Hygienic Laboratory and prepared by its staff. Phenol, 0.5 per cent, was used as a preservative.

Patient 2 received 255 cc., of which 40 cc. was given intramuscularly and 215 cc. intravenously. Patient 3 received 255 cc. intravenously, patient 4 received 325 cc., patient 5 received 245 cc., patient 6 received 200 cc., and patient 7 received 890 cc. Between 50 and 100 cc. was given daily, the amount depending on lung involvement and height of fever. At time of injection the serum was mixed with equal parts of warm physiologic solution of sodium chloride. It is a rather difficult matter to evaluate the effect of this treatment at the present time. But the fact remains that of the seven patients treated the one who did not receive serum died and the six who received serum recovered.

The case that proved fatal seemed no more severe at the onset than did some of the others, though the man was in rather poor physical condition. On the other hand, patient 5 received serum earlier than any of the others and in larger volume, yet the illness ran a more severe and prolonged course than any of the others.

We venture to express the opinion that psittacosis has been overlooked frequently even in the presence of an epidemic and in isolated cases the diagnosis would almost certainly erroneously be that of some commoner condition. Indeed, it would be too much to expect that the nature of the infection would be recognized unless the possible source in the shape of infected birds was taken into consideration.

The clinical picture, while characteristic enough, especially when the results of roentgenologic observations are available, is not so strikingly different from commoner conditions as to do more than suggest to the clinician that he is dealing with an unusual disease.

We think it is worth pointing out that no secondary cases developed from contact with our patients either at home or in the hospital. This lack of infectiveness of the person sick of psittacosis is in sharp contrast to the extraordinarily high infectiousness for man of infected birds.

SUMMARY

Seven cases of psittacosis occurred in laboratory workers or assistants during the course of their study of and experiments with diseased parrots. For the first time to our knowledge this study embraced daily serial roentgenologic study of lung involvement; as complete laboratory work as present knowledge of the disease permits; the use of immune serum in daily doses with apparent benefit; careful pathologic study of the fatal case, and presumptive evidence eliminating *P. psittacosis* as the causative agent.

U. S. Naval Hospital.

SOLITARY CYST OF THE KIDNEY

REPORT OF FIVE CASES *

HERMAN L. KRETSCHMER, M.D.

CHICAGO

The extremely interesting and relatively rare condition of solitary cyst of the kidney has been the subject of renewed interest during the past seven or eight years. In a previous article, published in 1920, I [1] reported a case and reviewed forty-seven cases found in the literature that were reported after the publication of Simon's paper. He was able to collect only fifty-two case reports.

An unusually interesting group of papers has appeared on this topic more or less recently, among which may be mentioned those by Fullerton, Harpster, Herrick, Kirwin, McKim and Smith, O'Neil, Quinby, George Gilbert Smith, and Swarz. Recently Carson [2] reported four cases. His review of the literature and the four cases in his paper bring the total number of cases on record up to 145. The 5 cases to be reported in this paper bring the total to 150.

Of interest as well as of importance is the question of coexisting pathologic involvement, especially the presence of malignant disease. Cases have been reported in which the presence of a malignant tumor was found in the cyst; namely, carcinoma and hypernephroma. Other lesions equally important, though less serious, such as stone and tuberculosis, have also been found.

There still exists today a difference of opinion regarding the origin of these cysts. Caulk,[3] who has studied a large series of cases, believes that "those who contend that all kidney cysts are of congenital origin are unquestionably making a statement which is unjustified." It seems evident, from the review of the cases reported, that some of the cysts must be considered of congenital origin, while the majority seem to belong to the class of retention cysts following obstruction.

According to Carson, three views are generally held: (1) that kidney cysts are due to embryonal rests; (2) that they are due to failure of union between the glomeruli and the collecting tubules, and (3) that they are retention cysts due to constriction of the tubules by fibrous tissue or blocking of the glomeruli or tubules by desquamated and degenerated cells, favored perhaps by small hemorrhages.

Cunningham [4] thinks that they are probably due to some undiscovered obstruction in the uriniferous tubules and the continued excretion of urine.

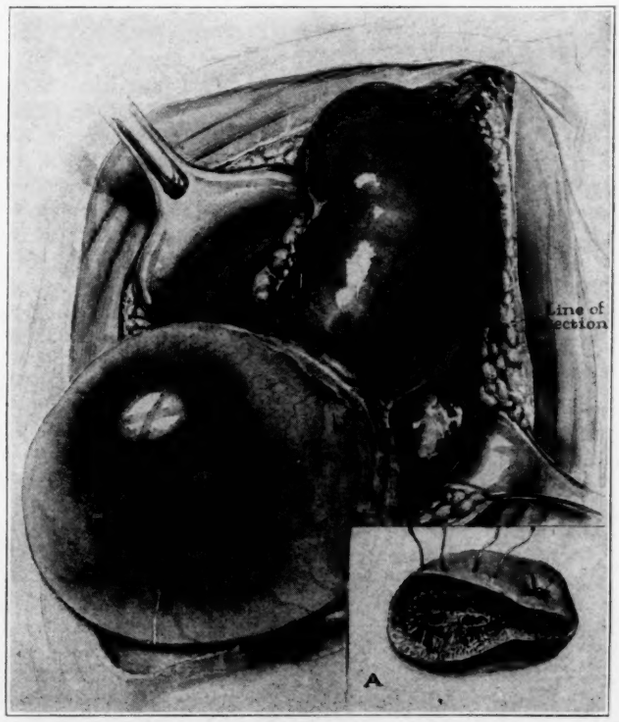

Fig. 1 (case 1).—Large solitary cyst at the lower pole of the kidney. The inset illustrates the method of closure.

McKim and Smith [5] give three theories, ascribing the condition to mechanical, neoplastic or congenital malformation.

One of the most interesting explanations of the origin of these renal cysts is given by Kampmeier,[6] who states that every individual during fetal life normally passes through a period characterized by the presence of numerous cystic renal tubules. This physiologic condition, however, may be converted into a pathologic one if the cystic tubules do not give way at the end of their allotted time but continue to grow and expand to the detriment of adjacent normal structures. In case a cystic tubule persists, it can readily be understood how it may produce the large renal cyst that is so frequently found in postmortem examination of the kidneys of infants, as well as in adults.

* From the Presbyterian Hospital of Chicago.

1. Kretschmer, H. L.: J. Urol. **41**: 567 (Dec.) 1920.
2. Carson, W. J.: Ann. Surg. **87**: 250 (Feb.) 1928.
3. Caulk: Tr. Am. A. Genito-Urinary Surg. **7**: 228, 1912.
4. Cunningham, J. H., Jr.: Surg. Gynec. Obst. **23**: 688 (Dec.) 1916.
5. McKim, G. F., and Smith, P. G.: J. Urol. **12**: 635 (Dec.) 1924.
6. Kampmeier, O. F.: Surg. Gynec. Obst. **36**: 208 (Feb.) 1923.

Of the five cases reported in this paper, operation was performed in two within twenty-four hours, a rather unusual occurrence in such a relatively rare entity.

REPORT OF CASES

CASE 1.—*History.*—M. S. G., a man, aged 61, referred by Dr. O. K. Thomson, was admitted to the Presbyterian Hospital, Oct. 22, 1928, because of colitis, for which he had been under treatment during the past three years, and hematuria. He had had typhoid eighteen years before. The family history was negative.

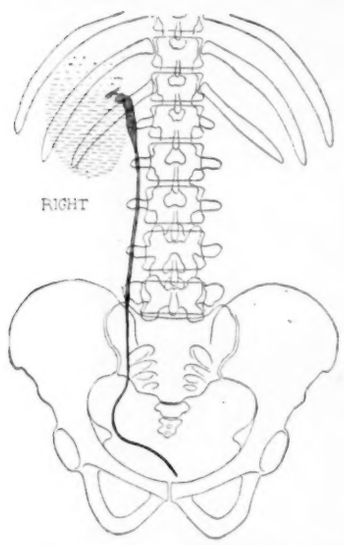

Fig. 2 (case 2).—Pyelogram showing filling defect compatible with tumor. This should be compared with figure 3.

The patient's chief complaint at present was hematuria. About three months before, while canoeing, he had noticed that his urine was dark red. This was not accompanied by pain, and he thought that it was due to a strain. A roentgen examination at that time showed the presence of a stone in the left kidney. The urine cleared up in about a week and no blood had been noticed until one week before admission.

Pain over the left kidney had begun about six weeks before and was described as a dull, sore ache localized over the left kidney region. There was no radiation, and the pain was not severe and bore no relation to urination, respiration or bowel movements.

A dull cramplike distress had also been noted over the region of the transverse colon, which had no relation to the taking of food. For the past three weeks the stools had been hard and lumpy. No blood was noticed in the stools.

For twenty years the patient had been obliged to arise once or twice at night to void urine.

Physical Examination.—The patient appeared well nourished and not acutely ill. The head and neck were normal. The teeth were in good repair. The heart and lungs were normal.

Examination of the abdomen disclosed no tenderness, rigidity or tumor masses. There were no scars. The lower edge of the liver was palpable at the costal margin. The spleen and kidneys were not palpable. The bladder was not distended.

The external genitalia were normal. Rectal examination was negative.

TABLE 1.—*Results of Urinalysis of Specimen Obtained at Cystoscopic Examination*

	Leukocytes Per Cubic Millimeter	Cultures	Tubercle Bacilli
Bladder	10	Sterile	None found
Right kidney	20	Sterile	None found
Left kidney	20	Sterile	None found

Examination of the blood showed 4,460,000 red blood cells, 7,400 leukocytes, and 85 per cent hemoglobin.

The blood pressure was 104 systolic and 68 diastolic.

The blood Wassermann test was negative.

Chemical analysis of the blood showed urea nitrogen, 23.5; uric acid, 4.4; creatinine, 2.2; nonprotein nitrogen, 49.5.

Cystoscopic Examination.—The presence of a small median bar was disclosed. There were no stones, tumors or ulcers in the bladder. The ureteral orifices were normal. Both ureters were catheterized without difficulty or obstruction. The results of urinalysis on a specimen obtained at the examination are presented in table 1.

With the phenolsulphonphthalein test the time of appearance was six minutes on the right side, 15 per cent being excreted in the first fifteen minutes and 5 per cent in the second fifteen minutes, with a total of 20 per cent in thirty minutes.

On the left side the time of appearance of the dye was seven minutes, 5 per cent being excreted in the first fifteen minutes and 5.5 per cent in the second fifteen minutes, with a total of 17.5 per cent in thirty minutes.

Roentgen Examination.—The right kidney outline was normal. The left kidney outline was normal except for a globular projection at the lower pole. This projection was faintly visible on several films. A dense shadow due to a stone was seen in the region of the inferior calix. A left pyelogram was normal.

The diagnosis was stone in the pelvis of the left kidney.

Operation.—At operation, May 8, 1929, under ethylene anesthesia, the stone was removed through a pyelotomy incision.

TABLE 2.—*Results of Urinalysis in Case 2*

	Leukocytes Per Cu. M.M.	Cultures	Tubercle Bacilli
Bladder	985	B. coli-communis	None found
Right kidney	36	Sterile	None found
Left kidney	18	Sterile	None found

A solitary cyst was found, which corresponded to the globular projection seen in the roentgenogram, attached to the lower pole of the left kidney (fig. 1).

The patient made an uneventful recovery and was discharged from the hospital, May 29.

Appearance of the Specimen.—The cyst was 4 inches long, 3 inches wide and 1¾ inches thick. It extended into the kidney substance one-half inch. It was translucent and thin walled, and contained clear pale yellow fluid. On the base there seemed to be a small renal papilla which was connected with the sac. A small cyst of one-fourth inch was also found in the kidney substance adjacent to the larger cyst.

The histologic diagnosis was nephrolithiasis and solitary cyst.

CASE 2.—*History.*—J. H. M., a man, aged 67, referred by Dr. Blount of Valparaiso, Ind., and Dr. Carney of Delphi, Ind., admitted to the Presbyterian Hospital, Sept. 25, 1929, had had typhoid at the age of 30 and influenza one year before admission. The family history was negative.

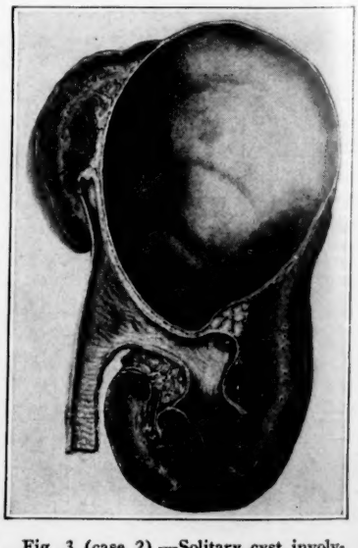

Fig. 3 (case 2).—Solitary cyst involving the upper pole. Note the type of pelvic deformity.

In October, 1928, the patient stated that he had had a very "severe cold," which was followed by a fainting spell associated with nausea and vomiting. On two or three occasions he had noticed that the seminal fluid was dark brown. There had also been present a dull feeling of discomfort in the right inguinal region. For a year or two he had noticed some frequency of urination, but there was no pain and no burning on urination.

Physical Examination.—The patient appeared moderately developed and undernourished but not acutely ill. The head and neck were normal. The teeth were in poor repair. The thyroid, liver and spleen were normal. The right kidney was enlarged, movable, easily palpable, smooth and not painful.

The external genitalia appeared normal. On rectal examination slight enlargement of the prostate was apparent.

The blood count was: red blood cells, 3,930,000; leukocytes, 8,350, and hemoglobin, 65 per cent.

The blood Wassermann test was negative.

The blood pressure was 142 systolic and 75 diastolic.

Chemical analysis of the blood showed: urea nitrogen, 12.2; uric acid, 3.9; creatinine, 1.3; nonprotein nitrogen, 28.6.

Cystoscopic Examination.—A mild generalized cystitis and a slight enlargement of the prostate gland were evident. The ureteral orifices were normal and the ureters were catheterized without difficulty or obstruction. The results of analysis of the urine obtained at this examination are given in table 2.

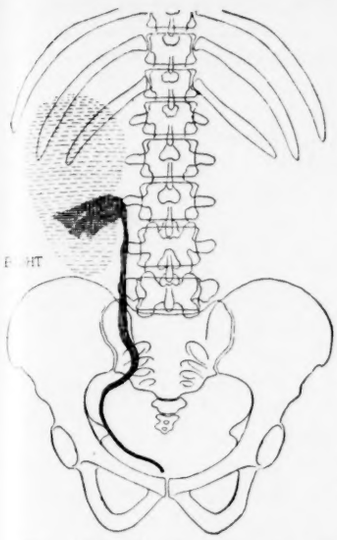

Fig. 4 (case 3).—Pyelogram showing displaced pelvis with dilatation. This should be compared wth figure 5.

With the phenolsulphonphthalein test the time of appearance of the dye was five minutes, 60 per cent being excreted in the first half hour; 12 per cent the second half hour and 10 per cent the third half hour, with a total in one and one-half hours of 82 per cent.

Roentgen Examination.—The left kidney outline and left pyelogram were normal; the right kidney was very large and globular in outline, especially in the lower pole. The right pyelogram showed a filling defect of the lower calices and part of the kidney pelvis (fig. 2).

Operation.—Under ethylene anesthesia, Oct. 15, 1929, the kidney was delivered through the usual oblique incision. A large solitary cyst was present (fig. 3). This explained the globular outline seen in the roentgenogram. The line of demarcation of the kidney was irregular and not sharply defined. The cyst replaced the lower two thirds or three fourths of the kidney, so that its remnant made up only about one fourth of the entire kidney and cyst. The cyst sprang from the lower pole. Because of the large amount of destruction of the kidney, a nephrectomy was done.

The patient made an uneventful recovery and was discharged from the hospital, October 31.

Microscopic Examination.—The cyst wall was made up of fibrous tissue, with many new-formed capillaries and some areas of round cell infiltration. At the periphery of the cyst wall were seen some compressed tubules. Some hyalinized glomeruli, as well as collections of lymphocytes, were seen in this region.

CASE 3.—*History.*—Mrs. M. D. H., aged 58, referred by Drs. Bram and Olson, was admitted to the Presbyterian Hospital, Oct. 10, 1929, because of great weakness and fatigue, loss of appetite and some loss of weight. There were no urinary symptoms.

The patient had been operated on for an ovarian cyst several years before and had recovered completely. Three or four years before she had had an attack of cystitis, which had been treated by means of lavage and irrigations of the bladder with silver nitrate. The symptoms rapidly disappeared and she was discharged as cured in a short time.

Physical Examination.—The skin and mucous membranes appeared decidedly pale. The pupils were equal, reacting to light and in accommodation. The tongue was clear, the mucous membrane of the mouth was pale and the teeth were in good repair. The thyroid was normal. The heart and lungs were normal.

Examination of the abdomen revealed the presence of a tumor in the right upper quadrant, about the size of a large grapefruit, smooth in outline, slightly tender and movable with respiration.

The red blood cells numbered 3,800,000 and the leukocytes 7,300; the hemoglobin was 75 per cent.

The blood pressure was 160 systolic and 98 diastolic.

The blood Wassermann test was negative.

Chemical analysis of the blood showed: urea nitrogen, 21.1; uric acid, 4.2; creatinine, 1.3; nonprotein nitrogen, 36.4.

Cystoscopic Examination (Oct. 11, 1929).—The bladder was normal. The ureters were catheterized without difficulty or obstruction. The results of analysis of the urine obtained at this examination and of the phenolsulphonphthalein test are presented in tables 3 and 4.

Roentgen Examination.—The left kidney outline was normal, the right kidney outline large, especially at the upper pole.

The right pyelogram was in the lower part of the large globular kidney outline. The pelvis and calices were slightly dilated and pointed downward and outward. A fairly sharp angulation between the kidney pelvis and ureter was seen (fig. 4).

TABLE 3.—*Results of Urinalysis in Case 3*

	Leukocytes Per Cu. M.M.	Red Blood Cells	Cultures	Tubercle Bacilli
Bladder	2	0	Sterile	None found
Right kidney	6	0	Sterile	None found
Left kidney	75	+	Sterile	None found

TABLE 4.—*Phenolsulphthalein Excretion in Case 3*

	Right	Left
Time of appearance	25 minutes	7 minutes
First 15 minutes	Trace	18%
Second 15 minutes	½%	6%

On the basis of the examination, which showed the presence of a palpable mass in the right kidney, with loss of weight and severe anemia, and of the pyelogram, a diagnosis of tumor, probably malignant, was made and an operation advised.

Operation.—Under ethylene anesthesia, Oct. 16, 1929, right nephrectomy was performed. The kidney was delivered through the usual oblique incision. A large solitary cyst was seen projecting from the lower pole (fig. 5). The line of demarcation between the kidney and the cyst was not sharply defined and was more or less irregular. The cyst encroached above the lumen of the pelvis and hence readily accounted for the type of pelvis seen in the pyelogram. The cyst probably pushed the liver upward and the kidney pelvis and calices downward. The sharp angulation between the pelvis and the ureter, the result of downward displacement by the growth of the cyst, probably accounted for the moderate hydronephrosis.

Fig. 5 (case 3).—An unusually large solitary cyst. The upper half of the kidney has been destroyed by the cyst.

Appearance of the Specimen.—In sections of the cyst at its junction with the kidney, stained with hematoxylin and eosin, was a layer 1 to 2 mm. thick composed of compressed tubules, glomeruli and fibrous tissue.

The fibrous tissue was most marked immediately near the cyst cavity. In it were a few round cells and an occasional tubule. The cells in the tubules were flattened. There were a few clusters of from three to four cells in which the nuclei were oval, sparse in chromatin, and about as large as cells in convoluted tubules. The proportion of fibrous tissue decreased

and the tubular elements increased as the outside of the cyst wall was approached. The compression of tubular elements extended for from 3 to 4 mm. outside the cyst wall. In this region there were elongated collections of lymphocytes containing from 100 to 200 cells; tubules were absent, and a few hyalinized glomeruli were present.

CASE 4.—*History.*—S. G., a man, aged 82, referred by Dr. Waters, was admitted to the Presbyterian Hospital, May 18, 1928, with the complaint that for the past two years he had been passing a small stream which had gradually been getting smaller and that at the present time the urine dribbled out. The family and past histories were negative.

The patient stated that during the past year he had had difficulty retaining the urine when the bladder was full, but that there was no incontinence until the bladder was full. Up to about one year before he voided every three hours, and this had increased until now he was obliged to void every ten or fifteen minutes. For a number of years the patient had been obliged to urinate occasionally at night, but at present the nightly urinations occurred from three to five times.

For the past four months, urination had been accompanied by a severe burning which was becoming more marked. For several months the urine had been very cloudy, but it cleared up at times. The patient stated that pus cells had been found in several examinations.

Three months before, shingles had appeared over the abdomen. Since that time the patient had had a dull aching pain in the left side, commencing at the costovertebral angle and radiating around into the left groin. The pain was not constant and did not seem to increase when the bladder was full.

The patient had lost 10 pounds (4.5 Kg.) in the past two months.

Physical Examination.—The patient appeared well nourished and not acutely ill. The head and neck were normal. The tonsils were small. The teeth had all been removed. The heart and lungs were normal.

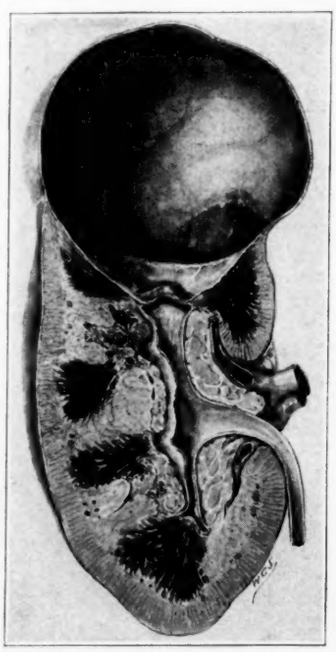

Fig. 6 (case 5).—Autopsy specimen (Norman Bridge Laboratories of Pathology, Rush Medical College, Chicago) showing the presence of a large solitary cyst involving the upper pole of the kidney. Note the small amount of involvement of the renal pelvis.

A mass was seen in the midline of the lower abdomen about 5 inches in diameter. It was soft, fluctuant and reducible and gave an impulse on coughing. There was no tenderness, rigidity or other palpable masses.

The external genitalia were normal, with the exception of the right epididymis, which was slightly swollen and tender. On rectal examination the prostate was found to be about two or three times the normal size, smooth, firm and not nodular or tender. The seminal vesicles could not be felt.

The red blood cells numbered 4,920,000 and the leukocytes 14,700; the hemoglobin was 80 per cent.

The blood pressure was 160 systolic and 80 diastolic.

The blood Wassermann test was positive.

Chemical analysis of the blood showed: urea nitrogen, 16.7; uric acid, 4.4; creatinine, 1.5; nonprotein nitrogen, 35.3.

Cystoscopic Examination.—The bladder was very irritable and there was a severe catheter urethritis. A definite notch formation above, a large intravesical right lobe, a large middle lobe and a lobe on the left side, much edema around the bladder neck and base, and generalized trabeculation and cystitis were noted. The ureteral orifices were normal.

The diagnosis was benign hypertrophy of the prostate. A two-stage prostatectomy was advised. A suprapubic cystotomy under local anesthesia (procaine hydrochloride) was done. On the fifth day after operation the patient died of pulmonary embolism.

The anatomic diagnosis (Dr. G. W. Apfelbach) was: pulmonary embolism; hypertrophy of the prostate; generalized arteriosclerosis, and a normal right kidney. The left kidney showed the presence of a solitary cyst at the lower pole.

CASE 5.—Figure 6 illustrates an autopsy specimen from the Normal Bridge Pathological Laboratories of Rush Medical College, and for the privilege of including it I am indebted to Dr. E. R. Le Count.

COMMENT

In four cases, roentgenograms were made. In three of the films the outline of the cyst was clearly demonstrable. The margins of the cyst were continuous with those of the kidney and there was some difference in density between the kidney shadow and that of the cyst.

It would appear, therefore, that in a good roentgen film the outline of the cyst can be demonstrated at least in a large number of cases.

The pyelograms in these three cases showed great variation, allowing one to state that the pyelogram is not typical and is not constant. In the first case the pyelogram was normal. In the second case the pyelogram showed a filling defect such as is frequently found in malignant disease of the kidney, and this was interpreted as a pyelogram typical for tumor. When the diagnosis was based on the pyelogram and the symptoms, the conclusion was malignant disease of the kidney. In the third case the pyelogram showed downward and outward displacement of the kidney pelvis. This resulted in a kinking at the ureteropelvic junction, with the development of a hydronephrosis. Cases 4 and 5 were observed at autopsy, and no previous pyelograms had been made.

SUMMARY

1. Solitary cyst of the kidney has been found recently in a series of five cases.

2. This condition is probably not as rare as is generally thought by clinicians, especially urologists.

3. A good roentgenogram ought to show the outline of the cyst in the majority of cases.

4. In cases in which the cyst springs from the lower pole, its recognition from the roentgenogram should be relatively easy.

5. Cysts in the upper pole are not so easily recognized in plain films, and when large they result in changes in the renal outline.

6. The pyelograms may vary, depending on the size of the cyst, its origin and the direction of growth.

7. In this series, one pyelogram was normal and two were definitely abnormal.

122 South Michigan Avenue.

Medical Teaching in the Roman Empire.—The original native Roman medical system was quite devoid of scientific elements and was that of a people of the lower culture. Interwoven, as is all primitive medicine, with ideas that trespass on the domains of religion and magic, it possessed that multitude of "specialist deities" which was so characteristic of the Roman cults. The entire external aspect of Roman medicine was changed by the advent of Greek science. Yet, notwithstanding the large medical field that the Western Empire provided, and the wide acceptance of Greek medicine by the upper classes, it is remarkable that the Latin-speaking peoples produced no eminent physician.—Singer, Charles: A Short History of Medicine, Oxford, 1928, p. 41.

LATENT GAS BACILLUS INFECTION COMPLICATING GANGRENE OF THE LOWER EXTREMITY *

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In the treatment of gangrene of the lower extremity a "line of demarcation" is frequently awaited before amputation is performed. This form of treatment is usually carried out in order to save as much of the affected limb as possible, without at the same time jeopardizing the patient's life.

If the patient presents what is termed moist, or septic, gangrene with definite signs of an inflammatory process superimposed on the gangrenous one, a close watch is maintained in order to detect any signs that the infection is ascending. When there are signs of an ascending infection, one does not hesitate to advise amputation immediately, and at the same time insist on a high amputation, usually at or above the knee, so that the operation may be carried out in sound tissues with a good blood supply. On the other hand, when the patient presents dry, or what some surgeons term aseptic moist, gangrene, with no local signs of an ascending infection in the affected limb, the surgeon or internist may feel justified in waiting for a definite line of demarcation before advising amputation of the affected part.

My purpose in this paper is to draw attention to the fact that there is in certain of these cases a definite risk to the patient in delay, because of the possibility of a latent gas bacillus infection being superimposed on the gangrenous process. Furthermore, when these patients come to operation, the site of amputation is usually chosen in too close proximity to the gangrenous area, so that the majority of the cases require a second emergency amputation at a much higher level, because of gas bacillus infection in the amputation wound.

During the past year this has been impressed on me because of three cases in which I have operated for gangrene of the lower extremity, one of which was a spontaneous gangrene of the left foot and ankle due to Monckeberg's arteriosclerosis in a woman, aged 47, who developed clinical gas bacillus infection following a lower leg amputation and required reamputation at the middle of the thigh as a life saving procedure. The second case was in a woman with diabetes and gangrene of the foot of four weeks' duration, in which a gas bacillus infection was already present when she was first seen. The third case was that of a man, aged 77, who developed gangrene of the lower leg six weeks before entry. He also showed definite gas bacillus infection at the time of admission. In addition to these three cases, I have gone through the records of the Massachusetts General Hospital and in the past eleven years have found three additional cases, all of which I shall report in detail.

This complication arising in gangrene of the lower extremity apparently has not been well recognized, as is shown by the fact that, in a search through the literature for articles on this subject, only one report, by Tanner [1] in 1927, was found. He reported seven cases of senile and diabetic gangrene complicated with gas bacillus infection. These seven cases, with the six reported here, make a total of thirteen on record.

Gas bacillus infection in traumatic wounds has been known and dreaded for a number of years. It was first described by Maisonneuve in 1853 under the name of "gangrene foudroyante." In civil life the condition is not encountered frequently, and at present is most frequent following some traumatic accident in the streets, such as compound fractures. During the recent European war, however, it was common following gunshot wounds, especially from shell fragments. The mortality from this disease was high, but was found to be greatly lowered by early diagnosis and immediate treatment. The literature toward the end of the war abounded in papers on this subject, including the treatment, so that I need not go into details concerning this, except so far as the cases I report are concerned.

REPORT OF CASES

CASE 1.—*History.*—Mrs. I. M. D., aged 47, a Canadian housewife, was admitted to the Emergency Ward of the Massachusetts General Hospital, Jan. 23, 1929, complaining of a cold, painful and purplish left foot and ankle of about one week's duration. Two weeks previous to entry the patient noticed a small area of redness about the toe nail of the left great toe. This area gradually became blue during the next day or two and, because of a similar experience with the right foot a few years previous, she called her physician, who told her to soak it in hot water. She did this but the redness continued to spread to her other toes and up the foot. There was no sudden attack of pain. She continued to walk on it for about a week and then it started to become so painful that she had to stay off it. After the foot became red it took on a dark purplish mottled appearance and became quite cold and numb. The family history was essentially negative. The past history was of interest, because at the age of 10 the patient was said to have had "rheumatism of the heart" for six weeks. Two years previous to her present admission she had had a sudden severe pain in the toes of her right foot, which became black up the ankle in the course of three weeks. An amputation was done about 4 inches below the knee. She had a stormy convalescence, as the wound did not heal by primary intention. One year previous she had been studied in the medical department of this hospital and discharged with the diagnosis of mild chronic rheumatic heart disease, chronic cystic mastitis, neurasthenia, and peripheral and central arteriosclerosis. Dr. P. D. White thought at that time that there was no indication that the heart condition was responsible for the gangrene of the right foot. The x-rays showed calcification of the femoral arteries. At that time it was noted that there were good femoral, popliteal and posterior tibial pulsations and questionable pulsations in the dorsalis pedis artery of the left leg.

Physical Examination.—The temperature was 101.8 F., the pulse 140, and respiration 24. The blood pressure was 130 systolic and 110 diastolic. The white blood count was 40,000. The urine was normal except for a slight trace of albumin. General physical examination was essentially negative except for the amputation stump of the right leg, and the heart showed an early diastolic murmur at the base. The left foot and ankle were cold and white, with purplish mottling of the skin. Just above the ankle there was a rather definite change in color and temperature, but no sharp line of demarcation. There were good pulsations in the femoral and popliteal arteries, but none in the posterior tibial or dorsalis pedis arteries. There was no definite evidence of ulceration or moist gangrene. The great toe was darker than the rest of the foot. The admission diagnosis was spontaneous gangrene of the left foot with thrombosis of the arterial blood supply secondary to arteriosclerosis, and chronic rheumatic heart disease.

Progress.—In view of the absence of any obvious acute infectious process in the foot, it was thought best to temporize and wait for a definite line of demarcation. This was done, morphine was given freely, fluids were forced, and a cradle with an electric light was placed over the leg for warmth. The leg was carefully wrapped in sterile cotton wool. During the next four days there was little change in the appearance of the leg. The general condition of the patient seemed to improve.

* From the Surgical Service of the Massachusetts General Hospital.

1. Tanner, E. K.: Gas Bacillus Infection Complicating Senile and Diabetic Gangrene, S. Clin. North America **7**: 1099 (Aug.) 1927.

The white count dropped to 24,000. The temperature remained around 100 F. and the pulse rate dropped from 140 on admission to around 100. The pain did not let up, however, and there was no demonstrable improvement in the condition of the foot and ankle.

Five days after admission to the hospital, a lower leg amputation, at the site of election, about 6 inches below the knee, was done under spinal anesthesia. It was noted at this time, at the site of the amputation, that there was no bleeding from the posterior tibial or peroneal vessels, but there was a good pulsation in the anterior tibial artery. There was little capillary ooze from the posterior flap, and the muscles and the tissues appeared anemic. When the peroneal vessels were severed it was noted that there was a definite blood clot in the lumen of the veins. This was the only evidence of any inflammatory process at the site of the amputation. The stump was closed without drainage.

The following day the patient's temperature was 103 F. in the morning but had dropped to 99 by the evening. The pulse was about 100 in the morning but was elevated to 140 in the evening. The second morning after operation the temperature was 104 F. and the pulse was still 140. The white count was later found to be 51,000. Examination of the wound revealed subcutaneous crepitus extending up to the lower end of the popliteal space. When the wound was opened, considerable foul smelling gas and pus bubbled out. A smear of this showed large numbers of *Bacillus welchii* and an organism indistinguishable from *Bacillus tetani* but which later proved not to be. A diagnosis of gas bacillus infection was made and a midthigh guillotine amputation was done under gas oxygen anesthesia, with as little traumatization of the tissues as possible. The tissues were all sound, with good blood supply at the site of operation, and with no evidence of infection. Carrel-Dakin's tubes were sutured to the stump. No attempt was made to close it. After operation, the patient received intravenously 20 cc. of concentrated perfringens antitoxin and 50,000 units of antitetanus serum intramuscularly. A wet dressing of hydrogen dioxide was applied and several injections of the same fluid were given through the Carrel-Dakin tubes, after which irrigations with surgical solution of chlorinated soda were used every two hours.

Amputated leg in case 6, showing marked gangrene.

Examination of the amputated leg showed typical gas gangrene which had extended along the posterior group of muscles well up into the popliteal space. The site of amputation was about 1 inch above the highest point showing necrosis.

Following this operation, the patient's temperature dropped to normal the next morning. The white count was 58,000 the day after the operation, but three days later it was down to 16,000. The wound remained clean, and it was treated with surgical solution of chlorinated soda. Skin traction was applied to the end of the stump about the second day, about 3 pounds of traction being used.

Skin traction was maintained for about ten weeks, at the end of which time there was only a small granulating area on the end of the stump about 1 cm. in diameter. The patient was discharged thirteen weeks after the amputation, at which time the stump was entirely healed. When the patient was seen two months later the stump was still well healed and the question of an artificial limb was being considered.

This patient nearly lost her life because of a delay of five days after entering the hospital before amputation was done. The primary amputation was not performed far enough away from the gangrenous area. The patient also spent thirteen weeks in the hospital convalescing and when discharged she had a poor functional stump. One must conclude from this case that there is a definite risk to a patient's life when a portion of an extremity with impaired circulation is without blood supply for several days, because of latent gas bacillus infection.

CASE 2.—*History.*—Mrs. M. F. C., aged 64, an Irish-American housewife, was admitted to the Emergency Ward of the Massachusetts General Hospital, Feb. 25, 1929, because of gangrene of the right foot and diabetes mellitus. The onset dated back about fourteen weeks, at which time the patient broke her diet and as a result was confined to bed. About four weeks previous to admission, a black bleb appeared on her right heel. This area increased in size and became ulcerated. The lesion was poulticed at home, but there was no improvement. Her legs became edematous, and during the past few days she had developed a productive cough. The family history was irrelevant, except that two sisters also had diabetes. The patient had previously been admitted in January, 1924, because of diabetes and gangrene of the fifth toe of the right foot. This digit was amputated and the wound healed without incident. Again in November, 1926, she was admitted because of diabetes and gangrene of the left great toe. As this failed to heal with conservative treatment, it was amputated about ten days after entry, under ethylene anesthesia. This wound healed slowly. Roentgen examination showed marked calcification of the blood vessels of both lower extremities at this time.

Physical Examination.—The temperature was 101 F., the pulse 100, and respiration 25. The blood pressure was 145 systolic and 90 diastolic. The urine was cloudy and acid, with a specific gravity of 1.020, a trace of albumin, a trace of sugar, and no diacetic acid. The sediment was normal. The white blood count was 34,800. The patient was dyspneic, propped up in bed and coughing frequently. The heart sounds were distant. The lung bases were full of medium crepitant râles. The radial arteries were very sclerotic. There was marked edema of the lower extremities and also of the abdominal wall up to the umbilicus. There were no pulsations palpable in the blood vessels of either leg below the femoral arteries. Accurate palpation was not possible because of the edema. Over the heel of the right foot and extending up on the dorsum there was a large area of moist gangrene. In the subcutaneous tissue of the dorsum of the foot and extending several inches above the ankle along the anterior group of muscles there was definite crepitation on palpation.

A diagnosis of diabetic gangrene with gas bacillus infection was made and a midthigh guillotine amputation of the right leg was done under spinal anesthesia. The operation was without incident. A tremendous degree of edema was present in the subcutaneous tissues, which drained profusely at the site of operation. The wound was left wide open, a dressing of hydrogen dioxide was applied and Carrel-Dakin's tubes were sutured to the end of the stump. Dissection of the amputated limb showed gas gangrene, which had extended in the anterior group of muscles to about the middle of the lower leg, so that the operation was performed through sound tissues.

Progress.—The patient's temperature dropped to normal. The diabetic condition was controlled with insulin and dextrose, and the wound remained clean with no evidence of gas bacillus infection. It was irrigated every two hours with surgical solution of chlorinated soda. The patient's pulmonary condition did not improve, however, and she died on the sixth day after operation from bronchopneumonia. She did not receive gas bacillus antitoxin.

This patient was operated on as soon as she was admitted to the hospital, but there had been a period of four weeks since the onset of gangrene in her foot, during which, at some time, the gas bacillus infection had

started. It probably was shortly before her entry but was not suspected by the physician who recommended her for admission. The disease was so extensive that it seems likely that it could have been diagnosed twenty-four hours earlier and the patient's life saved, because, although she did not die directly from the gas bacillus infection, it had been progressing long enough so that it must have had a definite toxic effect on her general resistance. The primary amputation was done in the lower part of the thigh, following which there was no evidence of gas bacillus infection.

CASE 3.—*History.*—E. F. P., a white man, aged 57, married, an American machinist, entered the Massachusetts General Hospital, March 4, 1927, with a history of glycosuria and numbness of the finger tips of six months' duration. Three months before, the patient had noticed a small ulcerated area at the base of the metatarsophalangeal joint of the fourth toe of the right foot. This ulceration persisted and there was some infection of the adjacent tissues of the dorsum of the foot. Six days before admission, the fifth toe of the right foot became very sensitive, swollen and discolored. The family and past histories were essentially negative.

Physical Examination.—The temperature was 99 F., the pulse 100, and respiration 28. The blood pressure was 140 systolic and 70 diastolic. The urine was normal except for two plus sugar and one plus acetone. The patient was well developed and nourished. The general examination was essentially negative except for the lower extremities.

The left leg and foot were in fairly good condition with palpable peripheral arteries.

The right foot was a streaked, dusky red over the dorsum. It was extremely tender along the lateral border. The inner side of the little toe presented an area of moist gangrene, which extended to the base of the fourth toe. There was a sinus at the base of the fourth toe which led down into the joint cavity. It was exuding a slight amount of serum. There was good pulsation in the popliteal artery, but none in the posterior tibial or dorsalis pedis arteries.

Progress.—The patient was placed on a diabetic regimen with the use of insulin, in an attempt to improve his condition. Hot moist dressings were applied to the foot. In spite of this the diabetic condition did not improve and the septic condition of his foot grew worse, so that at the end of a week there were signs of lymphangitis extending well up his leg; the temperature had risen to 101 F., and the gangrenous area was spreading up over the dorsum of the foot.

Operation was finally performed on the eighth day after admission. Under ethylene anesthesia the leg was amputated 6 inches below the knee. The wound was closed without drainage. Postoperatively the diabetic condition was vigorously treated to ward off coma. On the second day the temperature rose to 104 F, and examination of the wound showed definite evidence of gas bacillus infection. Reamputation was done immediately at the midthigh, under ethylene anesthesia, and the wound was irrigated with surgical solution of chlorinated soda. A good deal of muscular tissue of the thigh had already become involved in the septic process, so it was cut away until viable muscle tissue was encountered.

The patient did not regain consciousness and died twenty hours later. Necropsy showed gas gangrene of the stump and a *Bacillis welchii* septicemia. He did not receive any antigas bacillus serum.

This patient was allowed to wait about eight days before operation was performed, during which time his condition, from both the diabetic and the surgical point of view, gradually grew worse. It is questionable whether the gas bacillus infection could have been diagnosed before the first operation, but if it had been kept in mind I doubt whether in the presence of a gradually increasing area of gangrene and lymphangitis the primary operation would have been delayed as long as it was or that it would have been done at such a low level, in spite of a palpable popliteal artery.

CASE 4.—*History.*—F. R., a man, aged 32, single, a Swedish draftsman, entered the Massachusetts General Hospital, Jan. 2, 1926, complaining of pain in the calf of his left leg of five months' duration, and gangrene of the second toe of the right foot of two months' duration. The onset had been about two months before, when the patient noticed that the second toe of the right foot had turned blue and a week later a small pimple appeared on the back of the toe. This lesion continued to spread and finally turned dry and black. The family and past histories were essentially negative.

Physical Examination.—The temperature was 99.2 F., the pulse 80 and respiration 20. The urine was normal. No blood studies were made. General physical examination was essentially negative except for the lower extremities, which showed the characteristic reddening that is seen in thrombo-angiitis obliterans. There was a large black gangrenous area on the dorsum of the second toe of the right foot. The rest of the toe was blue. No mention was made at that time of any phlebitis, although there was some reddening in the region of the instep. There was no mention of the condition of the peripheral arteries.

Progress.—The patient was treated conservatively, with sterile dressings, forcing of fluids and Buerger exercises. Twelve days after admission the gangrenous toe was amputated, under gas-oxygen anesthesia, and the wound was irrigated with surgical solution of chlorinated soda.

About two weeks later, or twenty-five days after admission, an amputation of the right lower leg at the site of election was done under ether anesthesia. The history did not state why this was done, but apparently it was because improvement was so slow.

Two days after operation the patient's temperature suddenly rose to 103.8 F., the pulse to 140 and the white count to 31,000. Examination of the stump showed evidence of a gas bacillus infection, which was corroborated by a roentgenogram. A culture taken at this time also showed *Bacillus welchii.* A third amputation was immediately performed at the midthigh. The incision was through sound tissues; the wound was flushed with hydrogen dioxide, and Carrel-Dakin tubes were inserted. Serum was not administered. Following this operation, the wound slowly closed. There was no recurrence of the gas bacillus infection. A plastic operation was done on the end of the stump two and a half months after entry, and the patient was discharged just three months after entry. When seen seven months later, he was at work and wearing an artificial limb.

This patient received conservative surgical treatment, which consisted of amputation of the gangrenous toe, but this was not satisfactory so was followed two weeks later by a lower leg amputation and then a midthigh amputation without closure of the stump. He was finally discharged after three months. Undoubtedly the mistake here was the delay between the first and second operations, a period of two weeks. The end-result, as in the other cases, was an extreme risk to the patient's life and a long hospital convalescence, and when discharged the patient had a poor functional amputation stump.

CASE 5.—*History.*—A. R., a Negro laborer, aged 46, married, entered the Massachusetts General Hospital, Dec. 14, 1918, with a complaint of soreness in his foot of ten days' duration The onset had occurred ten days before admission. The first sympto[illegible]he patient noticed was soreness of the right foot. He l[illegible]ound that day, although the pain became much worse[illegible]he [illegible]xt day he called his local physician, who thought he had nervous prostration. At first the foot was cold and stiff and then it turned purple. When his physician saw him again, he sent him to the hospital with a diagnosis of "thrombosis of the right leg." The family and past histories were essentially negative.

Physical Examination.—The temperature was 100.2 F., the pulse 118, and respiration 25. The urine was normal. No blood studies were made. The patient was well developed and nourished. The general physical examination was essentially

negative. Local examination of the right leg showed considerable swelling, and there was an area involving the anterior third of the right foot which was blackish purple. The lower part of the extremity was cold and there was no sensation over the discolored area. No mention was made of the condition of the peripheral arteries.

Progress.—The temperature remained about 100 F. and the pulse rate dropped to 90. The extremity changed very little in the next few days. Three days after admission an amputation was done under ether anesthesia, at the junction of the upper and middle thirds of the lower leg. The wound was sutured but drained with rubber drains. The night after operation the patient's temperature rose to 103 and his pulse to 120. On the fifth day after operation, a diagnosis of gas bacillus infection was made, which was later proved by culture. A secondary operation was done. The stump was drained and irrigated with surgical solution of chlorinated soda. The infection had extended only about 3 inches up the leg. The patient did not receive any gas bacillus antitoxin. Following this he continued to have a septic fever for about eight weeks, at the end of which time a plastic operation was done on the stump. This was not very successful as the wound had to granulate in, and he was discharged with a granulating wound ninety-three days after the first operation.

This patient was fortunate, as he did not need reamputation, but he did have a long hospital convalescence and not a good functional stump at the end of three months. The delay in amputation was only three days in this case, which brings out the fact that delay, even of a short duration, may be dangerous.

CASE 6.—*History.*—J. C. P., a man, aged 77, an American, was admitted to the Emergency Ward of the Massachusetts General Hospital, Dec. 30, 1929, because of gangrene of the right leg. One month previous to admission the patient had had a shock, following which his right arm and leg became paralyzed. One week previous to admission a whitish line of demarcation appeared over the dorsum of the right foot and on the dorsal surface of the right leg. About four days later the whitish area began to turn dark purplish. The local physician treated the leg with charcoal dressings and finally sent the patient into the hospital for amputation. The family history was essentially negative. The patient had always been well and active.

Physical Examination.—The temperature was 98.8 F., the pulse 90, and respiration 20. The blood pressure was 130 systolic and 90 diastolic. The urine was normal. The white blood count was 15,500. The patient appeared emaciated. He was markedly dehydrated. His enunciation was poor as a result of his recent stroke. He had a right facial paralysis. The lungs were clear to percussion and auscultation. The heart was slightly enlarged, with an apical systolic murmur. The rhythm was quite irregular as a result of extrasystoles. The peripheral blood vessels were sclerotic and tortuous. The abdomen was normal.

The left leg was in fairly good condition. The popliteal artery was readily palpable. The right leg from about 3 inches below the knee was cold to the touch. There was a large black eschar over the entire surface of the lower two thirds of the leg. The skin over the dorsum of the foot was moist and dark purplish. No peripheral vessels were palpated below the femoral artery.

Progress.—A diagnosis of gangrene of the right lower leg, secondary to arteriosclerosis, was made. There was no clinical evidence of gas bacillus infection, but a roentgenogram was taken which showed gas deep in the muscle planes.

Amputation was advised and a midthigh guillotine amputation, without closure, was done under spinal anesthesia. There was a clot in the femoral artery. The quadriceps femoris muscle had a cadaveric appearance, as the blood supply to it was scant. Carrel-Dakin tubes were sutured to the stump. A hydrogen dioxide dressing was applied and this fluid was injected every two hours for the next forty-eight. Cultures taken from the muscles and blood vessels at the site of amputation did not show the gas bacillus. A portion from the popliteal vessels yielded *Bacillus welchii*, and smears from the upper part of the lower leg, under the eschar, showed *Bacillus welchii*, as did also cultures from this region. A blood culture taken after operation was negative.

Skin traction was applied to the stump about forty-eight hours postoperatively. The patient was incontinent of urine, so the bladder was put on constant drainage. The wound remained clean with irrigation with surgical solution of chlorinated soda. There was never any evidence of gas bacillus in the wound. The condition on the whole remained fairly good until the ninth day after operation, when the patient began to develop bronchopneumonia, from which apparently he died four days later. The patient did not receive antigas bacillus serum.

This patient was allowed to remain too long without adequate treatment before his admission to the hospital. Despite the poor blood supply to the quadriceps muscle, no gas bacillus infection developed in the wound, which was left wide open. It is of interest to note that *Bacillus welchii* was obtained in cultures from the popliteal vessels at some distance from the easily recognizable gangrenous area.

COMMENT

There are many cases of gangrene of the lower extremity in which gas bacillus infection does not develop, either preoperatively or postoperatively. I feel sure there are not a few cases with a latent unrecognized gas bacillus infection that are cured by early high amputation; thus the diagnosis is not often made unless, as in the six cases I have reported, the infection appears following amputation, or the infection has progressed so far that there is easily recognizable crepitation in the affected limb.

Gas bacillus infection in a certain number of cases does complicate gangrene of the lower extremity, as the cases reported here show. The question that naturally arises is, How do these gangrenous extremities and later the amputation wounds become contaminated with this organism, when previous to the operation, done under all the ordinary aseptic precautions, there was no evidence of a gas bacillus infection? I think this can best be answered by the fact that the gas bacillus is much more widespread in nature than is generally recognized, and also that it is often found in tissues undergoing decomposition. Zinsser [2] in his textbook on bacteriology states that "*B. welchii* is a normal inhabitant of the intestinal tract of adults and may be found in the stools of infants." Besson [3] also, in his textbook on practical bacteriology, says: "*Bacillus perfringens (B. welchii)* is exceedingly widespread. It is a normal inhabitant of the alimentary canal of man and many lower animals, and it possibly plays a part in the etiology of certain forms of diarrhea. It is also present in bodies undergoing decomposition."

These facts confirming its occurrence, and especially the presence of this organism in decomposing bodies, possibly explain the source of the infection in these cases, as all cases of gangrene present areas of decomposing tissue.

How the infection reaches the site of the amputation is not well understood. Tanner made efforts to recover the organism in his cases from the vessels of the amputated limbs but was unable to do so. There is usually no gross evidence of infection at the site of the operation, but that there must be organisms in the region of the amputation there can be little doubt. One possible

2. Zinsser, Hans: A Text Book of Bacteriology, New York, D. Appleton & Co., 1922, p. 755.

3. Besson, A.: Practical Bacteriology, Microbiology and Serum Therapy, translated by H. J. Hutchins, London, Longmans, Greene & Co., 1913.

route through which the amputation wound may become infected is by direct contamination from the skin at the site of operation. In all the cases reported here in which gas bacillus infection developed postoperatively, there was the usual preoperative preparation of the skin. The skin was shaved, washed with soap, water and alcohol, and covered with a dry sterile dressing. In case 1, preparations of this nature were made twice a day for several days before operation. Then finally the operative field in all cases was thoroughly painted with a 3.5 per cent solution of iodine.

Another possible clue to the mode of spread was the observation made in case 1. When I cut through the posterior tibial and peroneal arteries, well above the area of gangrene, there was no flow of blood. The posterior group of muscles had practically no capillary blood supply. There were thrombi in the veins accompanying the arteries, which may have been evidence of an infectious process in that region. In view of the gas bacillus infection that developed postoperatively and was confined to this posterior group of muscles, it seems highly probable that there must have been organisms present in the thrombosed veins or the lymphatics of that region. The organisms must also have been in a quiescent state; but when the amputation was performed the freshly cut, traumatized and partially devascularized tissues in the posterior aspect of the leg furnished a good medium for the organisms. That the organisms may be present in poorly nourished tissues well above the area of gangrene is further substantiated by the fact that *B. welchii* was recovered from the popliteal vessels in case 6 some distance from the gangrenous area. In the other three cases also in which bacillus infection developed, amputation was done well above the areas of gangrene. This was also true of four of the cases reported by Tanner.

It is because of this latent character to the infection that an early diagnosis is not readily made. In only two cases of the six was gas bacillus infection detected prior to operation. In case 2 it had developed to such an extent that there was crepitation under the skin of the lower leg, and in case 6 roentgenograms showed gas deep in the muscles of the leg. In the other cases it was not suspected. In the seven cases reported by Tanner, five showed no clinical evidence of gas bacillus infection, according to his paper. One case showed the typical clinical picture of gas infection, and in the other *B. welchii* was obtained in a culture from an ulcer, but no infection was evident clinically.

Gas bacillus infection in gangrene of the lower extremity may occur in any type of gangrene. Thus in the six cases I have reported there were three types of gangrene. Patients 2 and 3 were elderly individuals, 64 and 57 years of age, with so-called diabetic gangrene. Both of them presented moist gangrene. Three other patients had a marked degree of peripheral arteriosclerosis. Patient 6 was an elderly man of 77, and patients 1 and 5 were relatively young, 47 and 46 years of age. The third type of case occurred in a young person who had thrombo-angiitis obliterans.

Another important fact brought out by these cases is that the condition may develop either in dry or in moist gangrene. Cases 1, 4 and 5 were examples of dry, and the others of moist, gangrene. Finally, gas bacillus infection may occur in cases in which no break in the skin can be demonstrated. Cases 1 and 5 are examples of this.

In the seven cases reported by Tanner, all but one patient were over 50 years of age, the youngest being 48. There were four cases of diabetic gangrene and three of arteriosclerotic gangrene. Four of them presented moist gangrene and three dry gangrene.

The duration of the gangrene varied in these cases from ten days to three months prior to admission to the hospital. Thus the duration of the process does not aid a great deal in the detection of the gas bacillus infection, except that in cases of several weeks' duration it should certainly be strongly suspected.

Roentgenograms are of value in the detection of gas deep in the tissues, where it cannot be palpated. Case 6 was an example of this. How early diagnosis can be made in these cases is not certain, but this aid should not be overlooked, especially in cases of relatively long standing gangrene. Following bullet wounds, Sprague [4] reports that, within twelve hours after the infliction of the wound, the gas resulting can be recognized and will be confirmed by another plate six hours later. For this reason it seems to me that in cases of gangrene in which immediate operation is not advisable it would be valuable to follow the condition with frequent roentgenograms.

In reviewing the cases I have reported, there were certain clinical signs and laboratory data which should have aided in an earlier diagnosis of gas bacillus infection. Patient 1 had on admission a temperature of 101.8 F., a pulse of 140, and a leukocytosis of 40,000. These three observations alone should have been warning of the presence of some type of infection. Case 2 presented definite crepitation in the lower leg, and also a temperature of 100 F., a pulse of 100, and a leukocytosis of 34,800. In case 3 there were definite signs of spreading gangrene and an ascending infection. The temperature had risen to 101 F. at the time of operation. A white count was not done, so the degree of leukocytosis is not known. Patient 4 had a primary amputation of a gangrenous toe and then two weeks later a lower leg amputation, the reason for which is not noted in the record. Patient 5 was admitted with a temperature of 100.2 F., and a pulse rate of 118. I feel quite sure that, if a white count had been made, it would have been considerably elevated. Patient 6 did not have much general reaction, as his temperature and pulse were not elevated much and the white count was only 15,500.

From these few cases I think it justifiable to say that if any patient with gangrene of the lower extremity presents fever, accelerated pulse rate and marked leukocytosis, without definite signs of an acute infection, one should immediately consider the presence of a latent gas bacillus infection.

If a diagnosis of such an infection is made, the next question is the course of treatment to be followed. Needless to say, amputation is important, but at what level and of what type? In four of the cases I reported, gas bacillus infection was not suspected and, in all four, amputation was done at the site of election on the lower leg, well above any area of gangrene. In all four cases gas bacillus infection developed in the leg, and in three of these reamputation was done in the thigh; no attempt was made to close the stumps.

In three of the seven cases reported by Tanner, primary amputations were done in the upper lower leg, and in all three postoperative gas bacillus infection developed. In two secondary amputations at a high level were required. In two other cases reported by him, primary operations had been performed on the

4. Sprague, F. A.: Gangrene of the Leg Due to B. Welchii, Diagnosed Roentgenologically, Am. J. Roentgenol. **6**: 145 (March) 1919.

feet, and both patients developed gas bacillus infection and required thigh amputations.

It is interesting to note that, in the cases reported by both Tanner and me, in which amputation was done below the knee, gas bacillus infection of the stumps developed. In thigh amputations, including secondary operations, four of the five cases I have reported in which this was done showed no evidence of the gas bacillus in the wound. In five of Tanner's cases thigh amputations were performed, and four of these healed without evidence of the gas bacillus.

In three of the four cases I have reported with amputation of the lower leg the stumps were sutured without drainage. All three required thigh amputation. In the fourth, suturing was done with drainage. In this case only further drainage was required and not a higher amputation. Four of the five patients who had thigh amputations which were not sutured did not become infected with the gas bacillus. The fifth one died from gas bacillus septicemia twenty-four hours after the operation. In this case the operation was carried out through tissues infected with *B. welchii*.

If a gas bacillus infection is not suspected, as it was in four of the six cases reported here, conservative treatment is sometimes employed. That this was a dangerous course to follow in these cases is quite evident. In four of the six cases, the patients were watched in the hospital for a period of from three to twelve days before amputation was done. The cases reported by Tanner were observed for a period of from three days to six weeks before amputation.

I do not wish to convey the impression that I would advocate immediate thigh amputation, without closure, in all cases of gangrene of the lower leg, but in cases of suspected or proved gas bacillus infection this is the safest course to follow.

Only two patients in my group of cases received any gas bacillus antitoxin. These were patients 1 and 6, who received it after the diagnosis of gas bacillus infection was made. Three deaths occurred in the six cases. One was directly due to the gas bacillus and in the other two the gas bacillus indirectly led to the patients' deaths. The three patients who recovered all remained in the hospital approximately three months, and none of them had good functional stumps on discharge. There were three deaths and four recoveries in the cases reported by Tanner. The deaths in his cases were not due to *B. welchii* directly, but undoubtedly it played a definite rôle in their causation.

Summary of Reported Cases

Case	Diagnosis	Age	Duration of Gangrene Before Admission	Stay in the Hospital	Site of Primary Amputation	Postoperative Gas Bacillus Infection	Site of Secondary Amputation	End-Result
1	Arteriosclerotic gangrene with gangrene of left foot and ankle	47	14 days	5 days	Upper lower leg	+	Midthigh guillotine	Discharged home after 13 weeks
3	Diabetic gangrene	57	3 months	8 days	Upper lower leg	+	Midthigh guillotine	Death in 20 hours; gas bacillus septicemia
5	Arteriosclerotic gangrene with gangrene of right foot	46	10 days	3 days	Upper lower leg with drainage	+	Drainage of stump	Discharged home after 3 months
4	Thrombo-angiitis obliterans	32	2 months	12 days	Amputation of toe and 2 weeks later upper lower leg	+	Midthigh guillotine	Discharged home after 3 months
2	Diabetic gangrene	64	4 weeks	Operated on immediately	Lower thigh guillotine	0	.....	Death in 6 days from bronchopneumonia
6	Arteriosclerotic gangrene with gangrene of right leg and foot	77	1 week	Operated on immediately	Midthigh guillotine	0	.....	Death in 13 days; bronchopneumonia and acute pericarditis

CONCLUSIONS

1. Gas bacillus infection may develop in any case of gangrene of the lower extremity resulting from impaired circulation, regardless of the age of the patient or whether the gangrene is moist or dry or the skin is intact or broken.

2. Conservative treatment, including delay for the appearance of a definite line of demarcation, if carried too far in these cases is dangerous, because of possible gas bacillus infection in the gangrenous extremity.

3. Roentgenograms of the affected limb may show gas deep in the muscle planes that cannot be detected by palpation.

4. In any suspected case of gas bacillus infection, immediate amputation is imperative.

5. In such cases, unless there is evidence of good circulation below the knee, it is much safer to amputate through the thigh.

6. In cases with a definite gas bacillus infection in the lower leg, either before or after a primary amputation, the operation of choice is a guillotine amputation through the lower third of the thigh, with no attempt at closure of the stump.

Patterns of Incipient Mental Disturbances.—Overindulgence in the home is among the causes of later maladjustments—of inability to meet the strenuous realities of life, and of inefficient men and nervous women. Parental affection yields to entreaties until the child thinks its wish is law. When the danger of overindulgence is seen, the brakes are applied, but then it is too late. The inevitable collision of personalities occurs, with serious, perhaps irretrievable, injury to the mental health of the child. Emotional eruptions and conflicts become the order of the day, and the patterns of incipient mental disturbances are laid down in the nervous system. . . . Shaping personality begins in the cradle and continues through the preschool period. By the time the primary room is reached the foundation of personality has been laid and, like a building, the possibilities of the superstructure are settled by the underlying support. In no previous era has there been so much effort to inform and aid parents and teachers whose minds are alive at the growing point, to know what is going on inside our boys and girls.—Swift, E. J.: The Psychology of Childhood, New York, D. Appleton & Co., 1930.

ASTHMA DUE TO A MOLD—ASPERGILLUS FUMIGATUS

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Asthmatic patients are divided into two groups, the reactors and the nonreactors, by means of cutaneous testing for protein sensitization. Specific therapy is accordingly indicated for the reacting group, either through the process of desensitizing treatments or through the removal of the offending allergen from the environment or the diet of the asthmatic subject. The clinical experience of the past two decades shows convincingly that asthma has been robbed of its terrors so far as the reacting group is concerned. Not so, however, with the majority of the nonreactors. The treatment of this large group of patients varies with the individual physicians who are called on for aid. It may be truly said that there are as many methods of treatment of nonreacting asthmatic patients as there are physicians to treat them.

Any research that would furnish additions to the list of allergic excitants would inevitably enlarge the scope of specific therapy. My residence in Newport, R. I., for seven successive summers, and my field work in connection with hay-fever studies brought to my attention forcibly a large host of air-borne organic bodies. These had hitherto received no consideration as potential specific irritants of the upper respiratory tract. I well recall the profuse growth of molds of varied hue which covered all leather goods and many articles of food during the damp, foggy days of early summer.

Accordingly, in 1923, I secured, through the kindness of Dr. Charles Thom of the U. S. Department of Agriculture, dried pelts of a mold, *Aspergillus niger* (laboratory number M-142) and a supply of corn smut and of the kernel smut of sorghum. With these three experimental reagents, I performed routine tests on all patients, both asthmatic and nonasthmatic, for the determination of possible sensitiveness. The results of two years' observations were negative.

My interest, however, was unabated in this special investigation. I was much encouraged by the results of other workers. In March, 1924, Van Leeuwen [1] of Holland reported his observation that ". . . grain, infected with mites, contains substances, due to the presence of the mites, which produce asthmatic attacks in a certain number of asthmatics. . . . Besides this substance others were tried. Grain infected with common fungi (*Penicillium glaucum* and *Aspergillus fumigatus*) showed a similar, though less distinct and less regular, action."

In July of the same year, Cadham [2] recorded the occurrence of three cases of asthma in farmers of western Canada who had been exposed to wheat rusts (*Puccinia graminis*). Positive cutaneous reactions were obtained with the rusts.

Four years later, in 1928, Hansen [3] of Heidelberg published his observations that extracts of molds yielded positive skin reactions in 15 per cent of his asthmatic patients. He found patients sensitive to the following species of molds: *Aspergillus niger, Aspergillus fumigatus, Penicillium glaucum* and, less frequently, *Aspergillus glaucus* and *Aspergillus nidulans.* Hansen's comment, in the light of subsequent developments, is of interest. "In the otherwise rich American literature on asthma, the molds" he remarks, "play no noteworthy rôle."

In this country, Hopkins, Benham and Kesten [4] of Columbia University College of Physicians and Surgeons were the first to report, in January, 1930, a case of asthma due to a fungus—*Alternaria* sp. Their patient showed extreme skin sensitiveness to a strain of *Alternaria* recovered from a house in which he had attacks.

With the acquisition of additional mold material from Dr. Thom, I continued the routine cutaneous testing of all asthmatic patients. The material consisted of dried pelts which were ground up into a fine powder. The varieties of molds included representative strains of *Actinomyces violaceus-ruber, Aspergillus carbonarius, Aspergillus flavus* (two strains), *Aspergillus glaucus* series (one strain), *Aspergillus nidulans, Alternaria* sp., *Penicillium expansum* 7029, *Penicillium crustosum* and *Penicillium dierckxii.* After testing 125 patients with these reagents, I encountered one who gave the classic positive skin reaction with *Aspergillus fumigatus.* Because of the inattention paid to molds by American investigators as etiologic factors in the causation of asthma—a fact to which Hansen has referred—I deem it of unusual importance to record the history of this patient.

REPORT OF CASE

History.—A white woman, aged 34, had suffered from asthma for nine years. No other member of her family had been a subject of asthma or of hay-fever. At the age of 5 she had had eczema. She had, however, been free from hives and was not susceptible to ivy poisoning. At the age of 16 she had had a "cold and bronchitis." At 23 she was the victim of the influenza epidemic and was sick two weeks.

At the age of 25, the patient had experienced her first attack of asthma. The disease made its appearance in the latter part of May, 1921. It began with symptoms of a "head cold," sneezing and coryza, and "went down into the chest." The asthmatic symptoms were constant and were unaffected by seasons. Cough had been especially troublesome. In fact, she was never free from it. A coughing spell after a meal usually resulted in vomiting. She had been able to retain only her lunch. Despite the incessant cough, the expectoration was scant. Dyspnea, orthopnea, wheezing and tightness of the chest, with an occasional paroxysm of sneezing, added to her distress.

Asthmatic attacks were provoked by eating potato chips and nuts, especially salty peanuts, and by moldy odors. In fact, she was susceptible to all kinds of odors. Winter "colds" aggravated her condition. Chilling, exposure to dust, and overexertion likewise accentuated a paroxysm. She was unaffected by contact with animals. It is noteworthy that her dyspnea was more marked during the daytime. Her body weight had decreased from 127 pounds to 116 pounds (from 57.6 to 52.6 Kg.).

In 1924, a series of cutaneous tests was performed with negative results. An autogenous bacterial vaccine was prepared from her sputum. The administration of this vaccine, in conjunction with parathyroid tablets, failed to bring relief.

Examination.—The patient first consulted me, April 30, 1925. Control tests with representative plant pollens, with food and with epidermal proteins in addition to *Aspergillus niger,* corn smut, and the kernel smut of sorghum were negative. These seemed to indicate that she was a nonreactor. The advent of the month of May marked an exacerbation of the asthmatic state which proved disabling. The intravenous admin-

1. Van Leeuwen, W. S.: Bronchial Asthma in Relation to Climate, Proc. Roy. Soc. Med. (Sect. Therap. & Pharm.) **17:** 19 (Aug.) 1924.
2. Cadham, F. T.: Asthma Due to Grain Rusts, J. A. M. A. **83:** 27 (July 5) 1924.
3. Hansen: Ueber Schimmelpilz-Asthma, Verhandl. d. deutsch. Gesselsch. f. inn Med. **40:** 204-206, 1928.
4. Hopkins, J. G.; Denham, Rhoda W., and Kesten, Beatrice M.: Asthma Due to a Fungus—Alternaria, J. A. M. A. **94:** 6 (Jan. 4) 1930.

istration of calcium chloride, as advocated by Pottenger,[5] mitigated the course of the disease to a gratifying extent. She has remained under my observation for the past four and one-half years. During this interval, the disease changed its character from a perennial state to a seasonal upheaval. The months of May, June and part of July have witnessed a recurrence of symptoms, though to a lesser degree than formerly. Occasional asthmatic attacks during the remainder of the year proved mild and short.

Course.—The following clinical excerpts portray the course of events:

Jan. 29, 1926, the patient's weight was 129½ pounds (58.3 Kg.), an increase of 13 pounds (6 Kg.) in four months. She had had no attack of asthma since the last week of June, 1925.

June 15, 1926, the weight was 133½ pounds (60.5 Kg.). The patient reported that during the preceding month she had perceived a peculiar odor while walking to her office. This odor would provoke wheezing and distress in the chest at times.

May 11, 1927, the patient reported a recurrence of asthma one week prior to this visit. She stated that she felt dyspneic.

May 19, 1927, control cutaneous tests were performed with pollens of trees, grasses, plantain and the docks. The results were negative.

Asthmatic symptoms were pronounced during May and June, 1927, and during May, June and July, 1928.

Tests with Molds.—March 1, 1929, the patient was subjected to routine testing with preparations made from representative molds. The powdered material of *Aspergillus fumigatus* promptly produced the characteristic wheal and zone of redness around the scratch mark. On the following day, an intracutaneous test performed with an extract of the mold in a dilution of 1:5,000 gave rise to a wheal, 40 mm. in greatest diameter, surrounded by a large irregular zone of redness. Considerable heat and itching were localized at the site of the test.

March 8, 1929, the first subcutaneous dose of the extract of *Aspergillus fumigatus* was administered. It consisted of 0.03 cc. of a dilution of 1:5,000. The extractive employed was similar to the one used in the preparation of my pollen extracts. It consists of one-third part of Coca's solution and two-thirds part of glycerin. The first dose provoked a swelling and area of redness approximately 5 cm. in diameter. The heat was intense. The patient complained of a "dusty feeling" in the nose. The following day she felt languid, as if she were "taking cold." Five days later, March 13, the second dose of mold extract consisting of 0.05 cc. of the same dilution gave rise to swelling equal in size to that produced by the first dose. The heat resulting from the subcutaneous reaction was even more intense. It could be felt through the sleeves of her garments. The patient experienced a "smoky feeling in the throat." On March 20 and 23, respectively, the third and fourth doses of the mold extract were administered, each consisting of 0.07 cc. of the dilution of 1:5,000. The usual intense local reactions of swelling and heat, and the sensation of itching ensued. In addition, catarrhal and asthmatic symptoms promptly presented themselves, in consequence of which the injections of mold extract were discontinued. March 27 and 29, the symptoms were severe enough to demand the use of epinephrine. The asthmatic state, undoubtedly initiated by the injections of the mold extract, continued with more or less constancy until June 3, 1929. It will be recalled that the patient's seasonal seizure of asthma occurred during the months of May, June and part of July. It would appear that in this instance the induced asthmatic state merged into the usual periodic manifestations. The season, however, proved of shorter duration, for on June 8, 1929, the patient reported that she was well enough to scrub floors.

Physical examinations have been repeatedly made by competent physicians during the long course of the patient's disease. These revealed nothing remarkable other than enlarged tonsils. A tonsillectomy, performed Aug. 22, 1928, apparently had little influence on the subsequent course of events. Radiographic examination of the accessory sinuses of the skull and of the organs of the chest likewise failed to disclose any pathologic condition. The external auditory canals were free from infection.

5. Pottenger, F. M.: A Discussion of the Etiology of Asthma in Its Relationship to the Various Systems Composing the Pulmonary Neurocellular Mechanism with the Physiological Basis for the Employment of Calcium in Its Treatment, Am. J. M. Sc. **167**: 203-209 (Feb.) 1924.

COMMENT

In the absence of any possible focus of mold infection, the conclusion that *Aspergillus fumigatus* acts as an allergic inhalant in this peculiarly susceptible patient is warranted. Fresenius in 1850 first described this mold. Extensive studies indicate that the habitat of the *Aspergillus fumigatus* series is variable and is widely distributed in soil and soil contaminated substances, on forage and on grain. It is a cause, also, of aspergillosis in birds. The following statement of Thom and Church[6] is significant: "This type of mold has proved to be a regular inhabitant of soil, at least in America; hence it may be expected in cultures from any substance contaminated with dirt."

In the light of the added information, the patient recalled that her first asthmatic attack occurred after she had lived four years in an old brick house which was damp and very musty. The kitchen and dining room were situated in the basement. The floors were decayed to such an extent that occasionally the leg of a chair would perforate them. The baseboard had become separated from the wall in many places and was undergoing a shredding process. Cleaning this part of the house invariably produced asthmatic symptoms in the patient. The crowded condition of Washington during and shortly after the World War restricted the choice of dwellings. The family occupied this house for six years. It is conceivable that exposure to excessive doses of mold in this environment sensitized the patient.

Foreign observers have noted a relatively high incidence of asthmatic persons sensitive to molds—15 per cent in Hansen's series. My patient is the only one in a series of 125 patients who reacted positively when tested with my collection of mold material. This difference may be explained by the difference in living conditions between the Old World and the New. Thatched roofs, the close proximity of domestic and food animals to human domiciles, and contact with animal food and excrement offer abundant opportunities for exposure to molds. Wherever more primitive conditions of life obtain, the greater is the liability of mold development and of mold infection. Space in the average American apartment is too limited to permit the housing of domestic animals or the storage of food in quantity.

SUMMARY AND CONCLUSIONS

In a woman who had been a victim of asthma for nine years, cutaneous tests with representative plant pollens, food proteins, epidermal proteins and a stock house dust extract were repeatedly negative. The first attack of asthma occurred after she had lived four years in a damp and musty brick house.

A preparation of *Aspergillus fumigatus* was one of thirteen mold reagents to yield a strongly positive cutaneous and intracutaneous reaction. An extract of *Aspergillus fumigatus* in a dilution of 1:5,000, administered subcutaneously, gave rise to a marked local reaction and provoked the asthmatic state.

In a series of 125 patients, this patient was the only one to react positively to mold reagents. The incidence is 0.8 per cent.

6. Thom, Charles; and Church, M. B.: Aspergillus Fumigatus, A. Nidulans, A. Terreus N. Sp. and Their Allies, Am. J. Botany **5**: 84-104 (Feb.) 1918.

Physical and radiographic examinations of the patient were negative.

Aspergillus fumigatus is a regular inhabitant of the soil and may be found in a dirt contaminated environment.

Regional mold surveys may assume an importance in the control of asthma equal to that of botanic surveys in hay-fever. Especially is this true of the grain and fruit producing sections of our country. A wider application of this newer study, initiated in 1923, will indicate to what extent the molds are causative factors of asthma in the United States.

1835 Eye Street, Northwest.

ECTOPÍA TESTIS PERINEI

REPORT OF A CASE *

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Since the publication last September of A. Lee McGregor's [1] brilliant description of a third inguinal ring, the explanation of ectopia testis has become a fascinating subject. McGregor, through an exhaustive

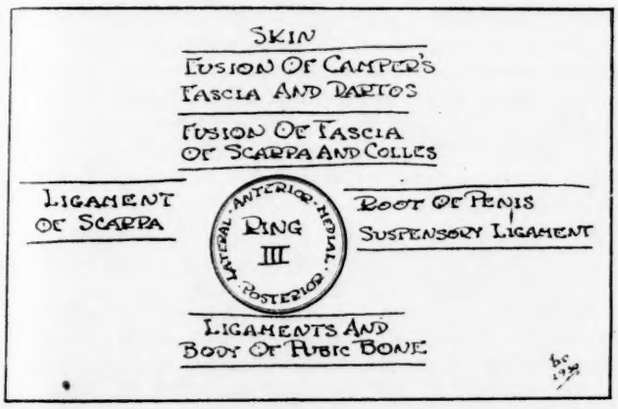

Fig. 1.—McGregor's third inguinal ring.

series of dissections, has explained the formation of a ring, easily felt clinically, which is the gateway to the scrotum from the inguinal canal. A finger, invaginating the scrotum to feel the external ring, passes through the "third" ring. Medial to the finger is the root of the penis and the suspensory ligament. Laterally is the ligament of Scarpa, which forms a gutter in which the cord is often felt. Anteriorly the ring is formed by the fusion of Scarpa's and Colles' fascia, and anterior to these, Camper's fascia is giving place to the dartos. Posterior to the exploring finger are the ligaments and the body of the pubic bone. This ring, together with a false one, was easily demonstrated in the case I am reporting.

It was John Hunter who named the gubernaculum. He chose the Latin noun for "helm"—that which guides—for the fibrous structure which he found attached to the testicle and which guided its descent. Lockwood declared that he found the gubernaculum to have six tails, contraction of which was responsible for the descent of the testicle. If one of the tails was better developed and hence more vigorous in its pull, Lockwood thought that the testicle would be drawn into foreign tissue and ectopia would result. In my case there was no doubt that the gubernaculum was firmly attached aberrantly and that it was unusually well developed. In fact, as the testicle was liberated from its ectopic pocket it was difficult to tell which structure was cord and which was gubernaculum since they were of equal size.

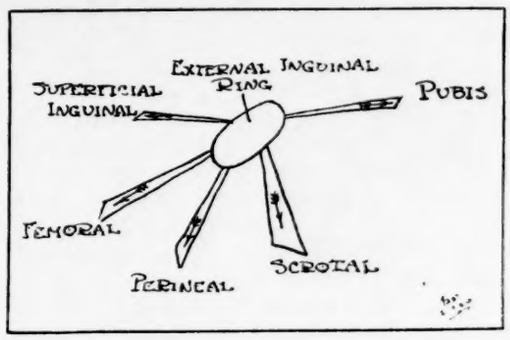

Fig. 2.—Lockwood's gubernacular tails (Eisendrath's modification).

REPORT OF CASE

C. W., a boy, aged 3 months, Anglo-Saxon, examined at the Guthrie Clinic, Jan. 27, 1930, was robust and well nourished, and apparently in the best of health. His mother and father were both healthy. His birth had been a normal, spontaneous one at the end of a full-term, normal gestation. He had a healthy sister, aged 3 years. There was no history of cryptorchidism, ectopia testis or hernia elsewhere in the family.

Examination revealed a normal sized penis, scrotum and left testicle. The right side of the scrotum was well formed but empty. Beneath the skin of the right side of the perineum, a full inch from the scrotum, lay a normal sized testicle. Neither external ring was dilated. There was no hernia. The condition apparently did not cause the child discomfort. As later in life the ectopic testicle would be subject to trauma by reason of its location, and because of the mental worry to the parents, operation was advised. Dr. Donald Guthrie operated. I assisted.

The usual incision for right inguinal hernia was made. No hernia was found, and the right external ring was not enlarged. The cord was found emerging from the inguinal ring just as if it were normal. At a point near the root of the penis, however, the cord, instead of descending normally into the scrotum, veered off to the right. Traction on the cord brought the testicle into view from a pocket formed in the right perineum.

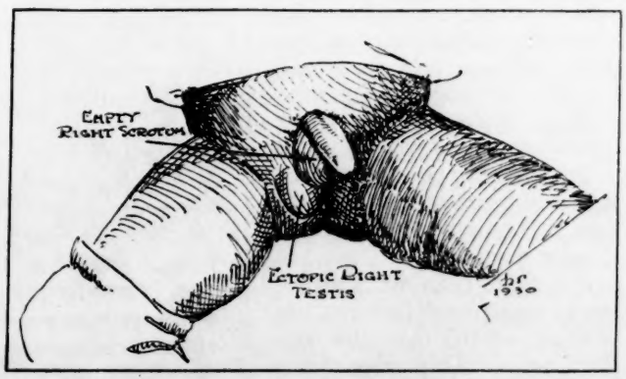

Fig. 3.—Ectopic right testicle.

It was surprising how little traction was required to do this. The finger was introduced into the right scrotum with very little effort and, when withdrawn, left a passageway into the scrotum into which the testicle could be easily placed. The cord was found to be quite normal in length. Attached to the testicle was a fibrous band about 3 mm. in diameter, the end of which was firmly attached into the ectopic pocket. Pulling on this band caused a dimple in the skin of the perineum. This band, the gubernaculum, was dissected free from the testicle,

* From the Guthrie Clinic.

1. McGregor, A. L.: The Third Inguinal Ring, Surg. Gynec. Obst. 49: 273-307 (Sept.) 1929.

which was then easily placed into the right scrotum, where it was anchored by one stitch. The opening into the scrotum was closed with a purse-string suture, as advised by Bevan. It might be remarked that, after the freeing of the testicle from its abnormal gubernaculum, it could be easily placed either into the right scrotum or into its ectopic pocket. Two rings were plainly discernible. The superficial fascia was united with interrupted chromic sutures, and the skin was closed with a continuous dermal suture. Ether was used for the operation. The child made an excellent and uneventful recovery.

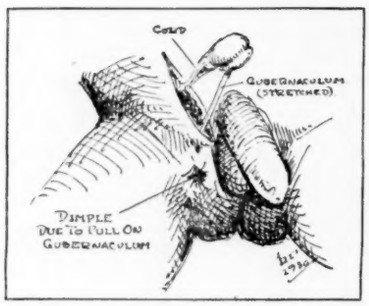

Fig. 4.—Dissection at operation.

COMMENTS

This has been the only perineal testicle seen at the Guthrie Clinic. John Hunter described two cases of perineal testicle in 1786. Curling gave the first detailed account of the condition in 1841 and collected nine case reports. In 1879, Annandale performed the first successful operative cure. Godard noticed only three cases of perineal ectopia in fifty-three cases of imperfect descent. He mentions an instance in which both father and son had perineal testes. Klein, in 14,400 recruits, found seventeen ectopic testes, but not one of the perineal type. There were only five cases of this type in the 936 imperfect descents reported by Eccles. Burdick and Coley [2] did not find a single case among their series of 537 patients with abnormally descended testes. The condition is therefore quite a rare one.

A study of this case brings up interesting possibilities. To begin with, the gubernaculum was certainly aberrant and well developed. This would favor Lockwood's original explanation of ectopia, except for the fact that careful dissection at operation failed to reveal anything resembling fibrous bands passing to the scrotum or femoral region from this main gubernaculum. The positive identification of structures forming a definite true and false third inguinal ring, as described by McGregor, makes me feel that the gubernaculum in this case "felt its way" into the aberrant position and that the testicle followed in its wake. I cannot see how, in this case at least, an abnormally formed gubernaculum could pull the testicle into the perineum without there being some structural flaw in the tissues such as McGregor describes.

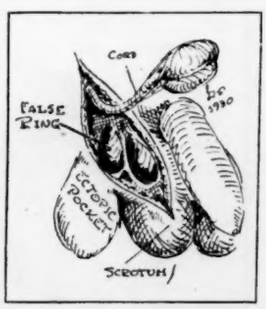

Fig. 5.—True and false "third" rings.

A definite ridge of Scarpa's fascia was found between the openings of the false and true third rings. This ridge might have easily deflected the exploring gubernaculum into the false ring. It might be explained that these rings were existent at the time of operation and were not artificially produced by dissection. After the recovery of the testicle from its perineal position, it was replaced easily into its proper place in the right scrotum.

Robert Packer Hospital.

2. Burdick, C. G., and Coley, B. L.: Abnormal Descent of the Testicle, Ann. Surg. **84:** 867-879 (Dec.) 1926.

STUDIES IN ASTHMA

IX. COUGH AS A MANIFESTATION OF HUMAN HYPERSENSITIVENESS *

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That vasomotor rhinitis and bronchospasm, as they occur in man, are in most instances manifestations of hypersensitiveness to some foreign substance has been recognized since 1906, when Wolff-Eisner [1] suggested the allergic nature of hay-fever, and 1910, when Meltzer [2] pointed out the possibility that bronchial asthma was a manifestation of anaphylaxis in man. Since then, different observers have reported instances of such varied symptoms as eczema,[3] migraine,[4] certain gastro-intestinal disturbances,[5] epilepsy,[6] and kidney and bladder pain [7] as being other manifestations of allergy. These contributions have opened new possibilities for the proper interpretation and better understanding of certain obscure symptom complexes in man.

It is singular that cough, which often accompanies vasomotor rhinitis as well as bronchospasm, has always been considered secondary to these conditions and never as an independent symptom of allergy. In a recent communication one of us [8] described a case in which cough alone, unaccompanied by either vasomotor rhinitis or wheezing, was due to a hypersensitiveness to orris powder. Since then we have observed other cases of a similar nature, of which the following three will serve as examples:

REPORT OF CASES

CASE 1.—A woman, aged 30, seen in August, 1929, had had a dry, nonproductive cough for two months. She was in the sixth month of pregnancy and felt perfectly well aside from the cough. She gave a past history of frequent colds and a family history of allergy, one sister having hay-fever and one sister eczema. Physical examination failed to reveal any apparent cause for her cough and expectorants did not relieve it. The stage of pregnancy was not likely to be an exciting factor, since she had gone through a previous pregnancy without having coughed.

Because of the family history of allergy the patient was tested with various proteins and found to be hypersensitive to feathers, dust and orris root. She was advised to avoid contact with the offending allergens and was asked to report within a month. She did not return, however, until early in February, 1930, at which time she reported no improvement of her symptoms. In the meantime, she had been delivered of her baby at a hospital but had felt no better while away from home. During the past month she had had a few wheezing spells. She admitted, however, contact with a "little bit" of face powder and the continued use of feather pillows.

Skin tests were repeated and additional positive reactions were obtained to milk, to several cereals, and to rabbit and

* From the Anaphylaxis Clinic of the Beth Israel Hospital and the Massachusetts General Hospital.

1. Wolff-Eisner: Das Heufieber: Sein Wesen und seiner Behandlung, Munich, 1906.
2. Meltzer, S. J.: Bronchial Asthma as a Phenomenon of Anaphylaxis, J. A. M. A. **55:** 1021 (Sept. 17) 1910.
3. Ramirez, M. A.: Protein Sensitization in Eczema, Arch. Dermat. & Syph. **2:** 365 (Sept.) 1920.
4. Vaughan, W. T.: Allergic Migraine, J. A. M. A. **88:** 1383 (April 30) 1927.
5. Andresen, A. F. R.: Gastro-Intestinal Manifestations of Food Allergy, M. J. & Rec. **122:** 271 (Sept. 2) 1925.
6. Ward, J. F., and Patterson, H. A.: Protein Sensitization in Epilepsy: Study of One Thousand Cases and One Hundred Normal Controls, Arch. Neurol. & Psychiat. **17:** 427 (April) 1927.
7. Duke, W. W.: Food Allergy as a Cause of Bladder Pain, Ann. Clin. Med. **1:** 117 (Sept.) 1922.
8. Colmes, Abraham: Cough Due to Hypersensitiveness to Orris, New England J. Med. **200:** 389 (Feb. 21) 1929.

dog hair. Physical examination at this time revealed an occasional squeak over both lungs. She was again warned to avoid contact with face powder and feathers, and at the same time milk was excluded from her diet. She was given an inoculation with a stock dust to which she reacted intradermally, and an expectorant was prescribed. Five days later, she reported marked improvement and a week later that she had been quite well, except for one bad night following exposure to cold. Since then, six weeks ago, she has been well.

The allergic background for this patient's cough was evidenced by the relief that followed the elimination of the substances to which she reacted. The failure to improve after the first visit was due to lack of cooperation on the part of the patient. The occurrence of wheezing about eight months after the first occurrence of cough and the simultaneous disappearance of both symptoms points to their common allergic background.

CASE 2.—A man, aged 35, had had an acute respiratory infection two and a half years before, which had been followed by a dry cough persisting to the present time. He sneezed more or less throughout the year but more so during the months of August and September. For the past two years he had been wheezing and coughing alternately or simultaneously. Treatment at several hospitals had brought no relief. At the Beth Israel Hospital, he was found to have bronchial asthma, emphysema, and an extensive infection of the sinuses, so that both antrums were drained through the canine fossa. While in the wards he felt much better, but when he went home his asthma returned. He was then sent to the anaphylaxis clinic for study. In addition to a family history of allergy, he gave a marked skin reaction to ragweed (confirming his story of hay-fever) and smaller but definite reactions to feathers. He was advised to change his sleeping room, and to avoid contact with feathers. His diet was adjusted. For the first time in months both his cough and his asthma became greatly improved.

In this case, too, the cough was an early manifestation of hypersensitiveness and it continued until its allergic nature was recognized. Meantime, the patient had developed asthma with a subsequent emphysema, and sinusitis. While the fixed changes in the pulmonary tissue and in the mucous membrane of the sinuses could not be expected to recede to normal, it is significant that, on the removal of the offending allergens from his surroundings, this patient experienced relief from his symptoms. His own estimation of his condition was "75 per cent improved." Our impression is that an early appreciation of this patient's hypersensitiveness and the finding and subsequent elimination of the offending allergens might have spared him the discomfort of an advanced asthmatic state. We may say that case 2 is simply an advanced stage of what would have developed in case 1 if it had been left unrecognized.

CASE 3.—A man, aged 26, took sick during the winter of 1924 with an acute respiratory infection and began to cough. He continued to cough for a long time after the acute illness had subsided. He raised a large amount of sputum, and after a few months began to raise blood. At one time he had an actual hemorrhage. Two years after the onset of the cough, wheezing occurred. Although the sputum was negative for tubercle bacilli, and roentgen examination gave no evidence of pulmonary tuberculosis, he was sent to a state sanatorium, where he remained for more than a year, but without improvement. Another hemoptysis occurred in 1926 and he was admitted to the Beth Israel Hospital in poor condition. He stayed there for six weeks but without improvement and was then sent to a different tuberculosis sanatorium, where he remained for one and a half years but still without improvement. He applied again for treatment. Among other investigations, a diagnostic bronchoscopy was done and some sputum obtained through the tube was sent to the laboratory for culture and the preparation of a vaccine. The patient was then sent to our clinic for vaccine inoculations. In a routine manner, his history was retaken and a history of allergy on both sides of his family was found. Tests with various proteins showed a strong reaction to all animal emanations. He was advised to get rid of his feather pillows, hair mattress, and all dust collecting furniture. One week after ridding himself of feathers, he felt like "a new man." He slept through the night without coughing. On rising in the morning he would cough and expectorate a large amount of phlegm, but the rest of the day he remained comfortable. The wheezing diminished to a minimum. He obtained a job as a supervisor and was able to hold it. Now he still has some cough and shortness of breath, but these symptoms occur only when he climbs stairs.

The asthmatic breathing in this case had previously been ascribed not to bronchospasm but to a chronic bronchial infection which resulted in exudation into the bronchial tubes, where it caused partial obstruction to the air passages and consequent wheezing. In other words, he was thought to have bacterial asthma. The occurrence of hemoptysis and at one time a real pulmonary hemorrhage supported the suspicion of a tuberculous background for the symptoms, especially since cough and not wheezing was the striking symptom of the disease. Subsequently the patient came into close contact with a dog and within a few minutes developed tightness of the chest, with coughing and wheezing which lasted for twelve hours. This observation strengthened our belief that a state of hypersensitiveness to animal emanations was the cause of the patient's early cough and subsequent wheezing. Furthermore, as long as the cough was left unrecognized he developed the secondary complications of bronchiectasis, hemoptysis and pulmonary emphysema. However, even at this advanced stage of the disease there occurred a marked alleviation of symptoms on removal of the offending allergens. Again we may say that, had the hypersensitive state been recognized earlier, it is conceivable that the patient's condition today might have been entirely different.

COMMENT

These three patients illustrate several important features of allergy. First, they demonstrate the clinical importance of noting the criteria of allergy which we[9] have already described. It was the finding of a positive family history of allergy which led later to the finding of positive skin tests and to the relief of symptoms when the corresponding allergens were eliminated. The occurrence of wheezing (asthma) in all the cases as a later manifestation may be regarded as confirmation of the allergic background.

Second, the onset during the acute respiratory infection needs comment. In many instances, an existing hypersensitiveness manifests itself only in the course of an acute infection, so that contact with the dog, for example, during a "cold," results in asthma, while the same contact in the absence of a cold fails to produce symptoms. The infection can evidently lower the threshold in some way to make a slight exposure adequate to cause trouble.

Third, allergic cough (without the presence of wheezing or râles in the chest) has not been emphasized in the literature. Firestone and Voorsanger[10] in a recent publication on unexplained cough failed to suggest the possibility of an allergic background. We believe that the cases reported here illustrate this new possibility.

9. Rackemann, F. M., and Colmes, Abraham: Studies in Asthma: The Clinical Characteristics of Hypersensitiveness, J. Allergy **1**: 2, 1929.
10. Voorsanger, W. C., and Firestone, Fred: Undiagnosed Cough: A Study of Two Hundred Patients, J. A. M. A. **89**: 1137 (Oct. 1) 1927.

Fourth, the variations in the clinical manifestations of disease in our three cases are easily explained by the assumption that they represent different degrees or stages in the amount of secondary bronchial infection. The first case represents the simple "uninfected" type. In the second, chronic bronchitis and emphysema complicate the picture. The third case illustrates well the possibility that hypersensitiveness to various dusts may be a seriously complicating factor in pulmonary disease of any kind.

Fifth, when hypersensitiveness forms the background in pulmonary or nasal disease, the recognition and elimination of the offending allergen may be followed by marked amelioration of the disease, even in its advanced stage.

The frequency with which cough occurs as a forerunner of bronchial asthma, and the relationship it bears to this disease in general, will form the subject of another communication.

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ASCARIS LUMBRICOIDES

TREATMENT, LOSS OF WORMS AND REINFESTATION *

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Studies on the rate of loss of human ascarids and reinfestation under tropical conditions were made by Cort and his collaborators in Panama.[1] They found that when treatments were effectively dispensed at the beginning of the rainy season the ascaris burden four months later had reached and in some cases surmounted the pretreatment level.

During the course of field investigations on the epidemiology of ascariasis in southwestern Virginia,[2] an opportunity was afforded for a similar study of reinfestation with ascarids after treatment under endemic conditions in the United States. For this purpose intensive studies were made of two small communities considered in the main report, Hawthorne, a small mining camp, and Ramsey, a discarded saw mill camp. In the main report attention was called to the fact that while nearly every home in these two communities was provided with some kind of a privy, that privy was seldom if ever used by the younger children. These children of preschool and early school ages were by their habit of defecating in the dooryards and playgrounds continuously seeding the soil with ascaris eggs for their own reinfestation.

All fecal examinations were made by the Stoll dilution egg count technic as outlined in the main report.[3] In each series herein considered the fecal specimens were collected at the homes, and all specimen tins from one family were grouped in a single paper sack before being conveyed to the laboratory. An effort was made to get specimens from every member of the family with but partial success. Adults are included in the series, but the majority of those examined were children under 15 years of age. As only identical individuals were included in each group, it seemed unnecessary to make any age grouping in such a short series. The grouping of specimens by families at the homes and the fact that the age and sex of each individual as well as the name were requested at each collection reduced the error of identification to a minimum. There is always the possibility of a specimen's being incorrectly labeled, but it seems unlikely that it occurred often. The confidence and cooperation of the mother were assured in most cases by the promise of adequate treatment for those requiring it. In many instances stools for experimental purposes were requested from designated individuals, and from the egg counts I never had reason to suspect deception in the labeling of these specimens.

The survey in the region started with the two camps mentioned early in June, 1928, and those individuals who harbored ascarids were given oil of chenopodium in July and reexamined early in August of the same year. A few individuals who did not use the medicine furnished them or who were examined for the first time in August and had heavy ascaris infestations at that time were immediately treated and were reexamined early in September. Both communities were reexamined the last week in May, 1929, practically a year after the first examination and less than eleven months after most of the treatment was dispensed. Table 1 gives the relative infestation of 157 persons examined in June or August, 1928, treated shortly thereafter, and reexamined in May, 1929. The incidence is actually higher a year after treatment than it was before treatment, as is the average egg count per individual. However, when the average egg count of those whose feces were positive is considered, that count is slightly lower in 1929 than it was in 1928. It is evident, therefore, that the infestation was essentially the same before and less than a year after treatment.

TABLE 1.—*Relative Infestation with Ascarids in the Same Series of Cases Before Treatment and Nearly a Year After Treatment* *

	Number Examined	Per Cent Positive	Eggs per Gram of Feces: Average for the Entire Series	Eggs per Gram of Feces: Average for the Positive Cases
Spring, 1928	157	69.4	22,000*	31,700
Spring, 1929	157	80.0	24,400	30,700

* The number of worms harbored by an individual or group may be roughly determined by dividing the number of eggs per gram by 1,000, according to Brown and Cort (The Egg Production of Ascaris Lumbricoides, J. Parasitol. 14: 88-90 [Dec.] 1927).

One might conclude from these figures that the treatment dispensed had not been used or else had not been effective. However, most of these people reported to me or to the sanitary officer that the treatment had removed large numbers of worms. In the 157 persons included in table 1, fecal examinations were made in 98 about a month after treatment. The results in this series are given in table 2. While the treatment reduced the incidence only slightly, it reduced the average egg count and the egg count per positive case to about one third of the original figure. One could hardly expect better results when treatment is dispensed to a population unit without hospitalization or similar supervision. The incidence figures and egg counts before and eleven months after treatment of the group that had been examined after treatment are comparable to those in

* From the Department of Helminthology of the School of Hygiene and Public Health of Johns Hopkins University. This study is part of the program of researches on ascariasis in children which is being conducted under the auspices of the National Research Council with the aid of a grant from the American Child Health Association.

1. Cort, W. W.; Schapiro, Louis; and Stoll, N. R.: A Study of the Reinfection After Treatment with Hookworm and Ascaris in Two Villages in Panama, Am. J. Hyg. **10**: 614-625 (Nov.) 1929.
2. Cort, W. W.; Otto, G. F., and Spindler, L. A.: Ascariasis in Southwest Virginia: A Preliminary Report, South. M. J. **22**: 608-614 (July) 1929. Investigations on Ascaris Lumbricoides and Associated Intestinal Helminths of Man in Southwest Virginia, Am. J. Hyg. **11**: 1-55 (Jan.) 1930.
3. Cort, Otto and Spindler (footnote 2, second reference).

table 1. It is evident, then, that the worm burden had returned to its pretreatment level in much less than a year.

While the group infestation had returned to its original level, the individual infestations had not followed in parallel order. Table 3 is a record of six representative families included in table 2 and gives a definite idea of how the several individuals reacted to treatment and their subsequent infestation. A letter T following one egg count indicates that following that examination treatment was prescribed and, so far as any information I have to the contrary, was used. It seems unlikely that it was always used, however, because some egg counts were higher after treatment than before. Families 6, 17 and 68 are representative of the most flagrant type of dooryard pollution. Families 65 and 82 are typical of the majority and nearly as promiscuous as the preceding, while family 23 is one of the few families following the sanitary requirements in the disposal of human feces.

Family 17 is one of the two families in the community not having any privy in use, though the egg counts are no greater than in many others. In this family the treatment was effective but the reinfestation was rapid. It will be noted that specimens from the mother, though negative on the first examination, were positive less than two months later, and at the time of each succeeding examination the egg count had increased. A child only 6 months old at the time of the first examination was not examined until a year later but at that time was found to have a high egg count. The return of the infestation in family 6 needs no discussion. The 1929 egg count in family 68 had reached the pretreatment level, but a specimen from a boy 5 years old was negative on the last examination though still positive shortly after treatment. The same thing occurred in the 3 year old boy in family 65, and the mother in that family had a definitely lower egg count a year after treatment than she did shortly after treatment. On the other hand, there is the case of the 5 year old girl in family 23 and of the 10 year old girl in family 82 whose feces were positive on the last examination but had previously always been negative.

Throughout the series there is frequent evidence that the individual infestations fluctuate without paralleling those of the group. Of the 157 individuals included in table 1 there were 60 whose feces were negative at the time of one or the other examinations. In only 20 of these were the feces negative at the time of both examinations. In like manner of the 33 cases in table 2 classed as negative at either the first or last examination, only 8 yielded negative specimens at the time of both. These do not take into consideration the examinations made shortly after treatment, when a considerable number of others were negative. In addition to these cases I have records of 30 others in which examinations were made twice or oftener and were negative at least once. Of these persons there were only 10 whose feces were negative at every examination. A natural or spontaneous passage of worms would take place more often than these figures indicate, for many would lose worms without entirely ridding themselves of the infestation or while acquiring a new infestation.

Five possible explanations of this apparent spontaneous passage of worms suggest themselves: (1) that the specimens were mixed, i. e., misidentified; (2) that the individuals were treated without my knowledge; (3) that the individual had some organic disturbance which resulted in worms being passed; (4) that the phenomenon of self-cure was in operation, or (5) that the worms had reached the maximum period of their existence and hence died.

The first alternative has been discussed and is believed to operate to a very slight degree. It seems probable that the other four conditions must operate to some extent. Various "patent" medicines are in extensive use in the region, and I learned that many individuals whose feces were both negative and positive at the time of examination had but recently passed ascarids following the use of one of these vermifuges. Frequently children pass ascarids during a fever or a temporary intestinal or gastric disturbance. In addition, it is not uncommon to learn that a child has passed ascarids without any accompanying disturbance. This may be due either to the worms having reached their maximum life or else to the operation of the self-cure phenomenon, reported by Stoll [4] to take place in the case of sheep infested with the twisted wire worm (*Haemonchus contortus*). He found that lambs given repeated infestations with this parasite lost the mass of the worm burden in less than twenty weeks and resisted subsequent attempts at reinfestation even with extremely heavy doses of these larvae. It seems unlikely that self-cure, if it exists in the case of these human ascaris infestations, operates to protect the individual from being reinfested. There is the possibility that protection resulting from the self-cure phenomenon, if it exists here, is made ineffective because of nutritional deficiencies or reduced vitality brought about by other unrelated diseases. The normal length of life of these worms has never been experimentally determined, but, judging from the egg capacity computed by Cram [5] and the daily egg output per worm determined by Brown and Cort [6] and others, the maximum length of life is much less than a year.[7] Hadwen [8] reported that 190 days after a colt had been experimentally infected with horse ascarids, *Parascaris equorum*, 10 per cent of the adult worms recovered at autopsy were dead in the cecum and colon, indicating that less than five months after infestation the adult worms were beginning to die off.

TABLE 2.—*Relative Infestations with Ascarids Before Treatment, Just After Treatment, and Nearly a Year After Treatment* *

	Number Examined	Per Cent Positive	Eggs per Gram of Feces: Average for the Entire Series	Eggs per Gram of Feces: Average for the Positive Cases
Spring, 1928	98	74.4	22,400	30,100
After treatment				
Summer, 1928	98	64.3	7,000	10,800
Spring, 1929	98	82.7	24,300	29,400

* These cases comprise a selected group of those presented in table 1 in which reexaminations were made after treatment.

Regardless of the particular factor or factors involved as the causative agent in the fluctuation of the individual worm burden, it seems probable that, when a community infestation reaches and maintains a certain level, that level is maintained by a continuous process of reinfesta-

4. Stoll, N. R.: Studies with the Strongyloid Nematode, Haemonchus Contortus, Am. J. Hyg. **10**: 384-418 (Sept.) 1929.

5. Cram, E. C.: Egg Producing Capacity of Ascaris Lumbricoides, J. Agri. Research **30**: 977-982, 1925.

6. Brown, H. W., and Cort, W. W.: The Egg Production of Ascaris Lumbricoides, J. Parasitol. **14**: 88-90 (Dec.) 1927.

7. Dr. H. W. Brown of Vanderbilt Hospital, Nashville, Tenn., will critically discuss this theoretical figure when he reports his experimental studies, now under way, on the length of life of these worms.

8. Hadwen, S.: Ascariasis in Horses, J. Parasitol. **12**: 1-10 (Sept.) 1925.

tion concomitant with a loss of worms. The rapid loss of worms had previously been noted by several investigators studying the sanitary condition of various jails. Fearnside [9] noted that prisoners confined in the Rajamundy jail six months had an ascaris incidence of 18.5 per cent, as compared to 36 per cent in prisoners just admitted. Willets [10] and Mhaskar [11] noted that in a Manila and an Indian jail the ascaris incidence was much lower in prisoners confined a year than it was in prisoners just admitted. While incidence figures are not accurate, they are more likely to conceal a loss of worms than to make the loss appear too rapid.

The studies made by Cort and his co-workers [12] in Panama give a quantitative estimate of the rate of loss and reinfestation in an untreated area. In the village of Chorrerita the worm burden as judged by the egg count was twice as large toward the end of the rainy season as it was at the beginning, four months previous.

TABLE 3.—*Complete Egg Counts of Representative Families* *

Family Number	Age, June, 1928	Sex†	Number of Eggs per Gram			
			June, 1928	August, 1928	September, 1928	May, 1929
17	33	♂	0	0	0	0
	27	♀	0	2,700	26,400	42,600
	10	♀	114,300 T	0	600	36,400
	7	♀	2,900 T	0	5,400	107,600
	5	♂	71,100 T	0	0	84,800
	3	♂	7,800 T	3,200	6,600	86,400
	6 mo.	♀	.....	.....	.....	62,800
6	6	♂	3,900 T	4,800	.....	14,400
	4	♂	600 T	0	.....	12,000
	3	♂	19,400 T	0	.....	16,800
65	24	♀	.....	12,900 T	3,300	400
	8	♂	17,500 T	.....	8,000	42,400
	5	♀	34,800 T	.....	16,800	6,000
	3	♂	11,700 T	.....	3,200	0
23	14	♀	0	0	.....	0
	8	♀	600	0	.....	0
	5	♀	0	0	.....	9,600
82	12	♂	50,700 T	27,200	25,500	28,800
	10	♀	0	0	0	2,400
	8	♂	86,400 T	3,300	11,200	18,800
	6	♀	10,500 T	.....	1,200	4,000
	4	♂	30,300 T	.....	10,000	16,800
68	10	♂	50,400 T	.....	2,100	42,000
	5	♂	63,200 T	.....	10,200	0
	7	♀	77,400 T	.....	15,600	121,200

* These families were included in the series presented in tables 1 and 2. A letter T follows the egg count when the individual was treated following that examination.

† In this column, ♂ indicates male; ♀, female.

The inference is drawn that there is a seasonal variation in the worm burden each year. The effects of the dry season, when soil pollution is less concentrated and the exposed eggs are more rapidly killed under tropical conditions, would not be reflected in the population worm burden unless that worm burden experienced a complete turnover within a year. It would be interesting to know whether the reduced exposure to infestation in the winter time in temperate zone areas such as Wise County, Va., would be reflected in a seasonal variation in the worm burden there.

It is evident from table 3 and the discussion just given that this continued process of reinfestation concomitant with a loss of worms is not parallel in each member of the group. The finding of a person whose feces are negative or one with a small egg count does not necessarily mean, therefore, that the individual is usually free from worms or is lightly infested. It is true that there are families and small communities in heavily infested areas which by their sanitary habits are protecting themselves, as shown on pages 39 and 40 of the main report [3] of these studies. Adult males and many adult females are not exposed to the same extent as children in ascaris households and so frequently remain free from worms for long periods. However, it is probable that all exposed individuals, i. e., children below adolescence in arcaris households or communities, are infested some time in the course of the year and that many more are free from worms at some time than are so reported by any given examination. The finding of a 69 per cent ascaris infestation in such communities as Hawthorne and Ramsey, for instance, does not mean that the 31 per cent free from infestation are the "negative element" of the population. Some, it is true, are adults but little exposed or members of sanitated households, but most of them are individuals who have somehow recently rid themselves of worms and may be expected to regain their worm burden in a short time when others will be free.

It becomes evident, then, that the routine dispensing of treatments for ascarids in an endemic area will do little to control the worm burden. It is conceivable that the use of mass treatment at frequent intervals during the course of a year might do much to lower the level of the infestation for a short time, but the effects would not be lasting without sanitation. The eggs are long lived and very resistant to environmental conditions, so that in any endemic area some would remain to start reinfestations at least. In the absence of proper sanitation, which means universal and exclusive use of the sanitary privy, the soil infestation would progressively increase and the massive worm burden in the population would build up rapidly. On the other hand, the universal exclusive use of the sanitary privy would probably be rapidly reflected in a reduced worm burden without treatment.

SUMMARY

A group of 157 persons of all ages were examined in the spring and early summer of 1928 and those harboring ascarids were treated with oil of chenopodium. Reexamination of 98 of these persons in the late summer showed that the treatment had reduced the egg count for the group to one third of its original figure. A few of those whose feces were negative at the time of the first examination and hence were not treated were passing worm eggs at the time of the second examination. Reexamination of the 157 persons the following spring revealed that the worm burden as judged by the egg count had returned to its pretreatment level. Only a third of those yielding negative specimens on either the first or the last examination were free from worms throughout. Spontaneous passage of worms is not uncommon and shows that, while the egg count for the population may reach a certain level, the individual infestations must vary tremendously. A seasonal variation is suggested by comparing these data with the tropical incidence, which supports my view that there is an almost complete turnover in the worm burden each year. This suggests that, while treatment without sanitation is noneffective, the universal and exclusive use of the sanitary privy in any community would rapidly reduce the worm burden without therapeusis.

615 North Wolfe Street.

9. Fearnside, C. T.: Ankylostoma Duodenale, Indian M. Gaz. **35**: 383-384, 1900.

10. Willets, D. G.: Intestinal Helminthiasis in the Philippine Islands as Indicated by Examination of Prisoners upon Admission to Bilibid Prison, Manila, Philippine J. Sc. **9**: 233-240, 1914.

11. Mhaskar, K. S.: Hookworm Infestation and Sanitation, Indian J. M. Research **8**: 398-406 (Oct.) 1920.

12. Cort, W. W.; Schapiro, Louis; Riley, W. A., and Stoll, N. R.: A Study of the Influence of the Rainy Season on the Level of Helminthic Infestations in a Panama Village, Am. J. Hyg. **10**: 626-634 (Nov.) 1929.

Clinical Notes, Suggestions and New Instruments

FLUID LIMITATION AND KETOGENIC DIET IN TRAUMATIC EPILEPSY *

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In the brief period that has elapsed since the introduction of the dietary control of epilepsy, a vast literature has accumulated dealing with various phases of the subject. More recently, following the work of Fay [1] on the hydraulic mechanisms involved in cerebrospinal fluid production, circulation and absorption in

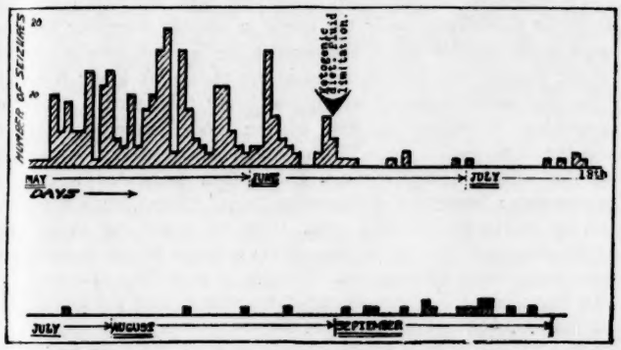


Chart 1.—The major convulsive seizures forty-two days preceding and 110 days following the institution of the ketogenic diet and fluid limitation.

the normal and in convulsive states, dehydration has become one of the prime factors in the control of the epilepsies. The relationship between fluid intake and convulsive seizures has been investigated by Fay and Winkelman.[2] Their work has resulted in the formulation of the "mechanical theory" of epilepsy. McQuarrie [3] has announced some significant clinical results obtained by the treatment of epileptic patients with a combination of the ketogenic diet and fluid limitation.

Up to the present time the literature dealing with these modes of treatment has not sufficiently emphasized their application in the so-called traumatic epilepsy. Fay [4] has said that, in many cases of generalized seizures clinically considered to be idiopathic in origin, the dehydration and dietary measures have disclosed a focal type of convulsion indicating a localized lesion which may be dealt with surgically.

The case here reported seems to be of value as an example of severe traumatic epilepsy responding to the dietary regimen and dehydration, without interference with the normal development of the youthful patient.

REPORT OF CASE

A boy, aged 11, had been normal up to the age of 6, when in June, 1925, he was thrown from a pony and dragged some little distance, sustaining considerable trauma to the head. He was conscious immediately after the accident and walked to his home, a quarter of a mile distant. On his arrival at the house he was drowsy and irritable and was put to bed. A physician saw him the same day and found an area of echymosis over the left frontoparietal region. He was quite well but a little sulky for three weeks following the accident.

On the twenty-first day the boy was somnolent and on the twenty-second day he had a convulsion lasting several minutes. The following day and for five weeks thereafter, he had several major convulsive seizures daily. He was taken to a hospital after the first convulsion and remained until July 27. On discharge from the hospital he was "hazy and there was incoordination of the legs in walking." He was also aphasic and his behavior was impulsive and often violent. Petit mal attacks were first noted on his return from the hospital—periods of abstraction, odd behavior, "falling spells," amnesias and other manifestations. Major convulsions recurred in December, 1925, and gradually increased in frequency and severity, until by January, 1927, from nine to twenty very violent seizures were recorded daily. Mental deterioration rapidly progressed and in January, 1927, his mental capacity was that commonly rated as idiocy. The attacks of petit mal had increased to from ten to thirty daily.

Feb. 20, 1927, an exploratory craniotomy was performed by Dr. Alfred Taylor. A large left frontoparietal flap was turned down and the dura was found to be moderately tense. When the dura was reflected there was seen a marked congestion of all exposed cortex, and some arachnoid opacity. The most striking feature was a bunch of varicose veins (from 3 to 5 mm. in diameter) centering about the anterior portion of the sylvian fissure and reaching in all directions for 3 or 4 cm. The varicosities were tied off with silk ligatures but not resected. The lower part of the bone flap was removed for decompression.

Following the operation the patient improved slightly, was able to walk and said a few words, but the convulsions continued. When he was admitted to this hospital in August, 1928, from two to thirty grand mal convulsions occurred daily and from three to forty petit mal phases. Phenobarbital, sodium bromide and chloral hydrate reduced this number but slightly.

June 12, 1929, the ketogenic diet was instituted by Dr. L. A. Schwartz, on a one and a half to one ratio, with a total of 1,250 calories, carbohydrate, 37 Gm.; protein, 35 Gm., and fat, 106 Gm. The diet was gradually increased in caloric value and the ratio increased to four to one, with a caloric value of 1,850; carbohydrate, 6 Gm.; protein, 40 Gm., and fat, 184 Gm. The total fluid intake was limited to a maximum of 800 cc. daily. To keep the weight increase and bodily development at a standard, the diet was shifted from time to time, but the ratio was maintained essentially the same. It has been thought advisable to maintain the weight of the patient at about 5 to 7 per cent below that of the average for his age and height.

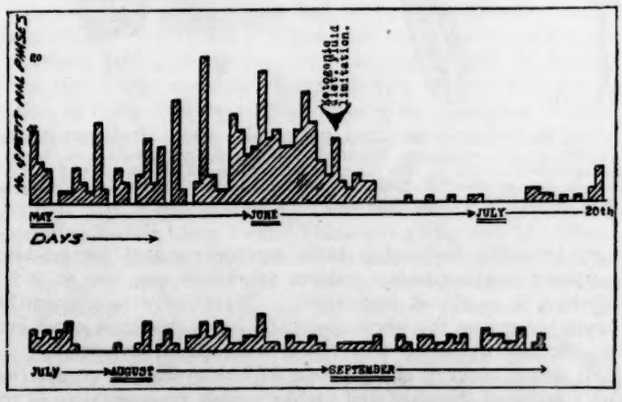


Chart 2.—The petit mal phases forty-two days preceding and 110 days following the institution of the ketogenic diet and fluid limitation.

The first day following the inauguration of the regimen there occurred four major seizures, and the second, third and fourth days, one convulsion; later they occurred about once weekly (chart 1). The petit mal phases likewise decreased in frequency but not quite proportional to the major attacks (chart 2). The charts show clearly the results over a period of five months, and up to the present time (ten months) there has been no noteworthy variation.

COMMENT

The method described here has been of value in treating a group of severe traumatic epilepsies in the neurologic clinic of the Pennsylvania Hospital. This case is fairly representative

* From the Pennsylvania Hospital, Department for Mental and Nervous Diseases.

1. Fay, Temple: Some Factors in the "Mechanical Theory" of Epilepsy, with Special Reference to the Influence of Fluid and Its Control in the Treatment of Certain Cases, Am. J. Psychiat. **8**: 783-833 (March) 1929.

2. Fay, Temple; and Winkelman, N. W.: Widespread Pressure Atrophy of the Brain and Its Probable Relation to the Function of the Pacchionian Bodies and the Cerebrospinal Fluid Circulation, Am. J. Psychiat. **9**: 667-687 (Jan.) 1930. Winkelman, N. W., and Fay, Temple: The Pacchionian System: Histologic and Pathologic Changes, Arch. Neurol & Psychiat. **23**: 44-64 (Jan.) 1930. Fay, Temple: The Therapeutic Effect of Dehydration on Epileptic Patients, Arch. Neurol. & Psychiat. **23**: 920 (May) 1930.

3. McQuarrie, Irvine: Epilepsy in Children: The Relationship of Water Balance to the Occurrence of Seizures, Am. J. Dis. Child. **38**: 451 (Sept.) 1929.

4. Fay, Temple: Personal communication to the author.

of the best results obtained in the entire group. In the particular case under consideration, the control of the convulsions rests largely on the variation of the fluid intake. Eight hundred cubic centimeters was set as a maximum total fluid intake, and in the weeks in which no convulsions occurred it was considerably below this figure. The days in which two convulsions occurred are those in which the maximum fluid allowance was consumed. Other cases treated in the neurologic clinic have shown comparable results, but detailed records are not available. One of the chief values of the dehydration management in our clinical work, in addition to decreasing the number of attacks, has been the discovery of localized irritative lesions which were masked by the intense generalized character of the seizure when food and fluids were taken ad libitum.

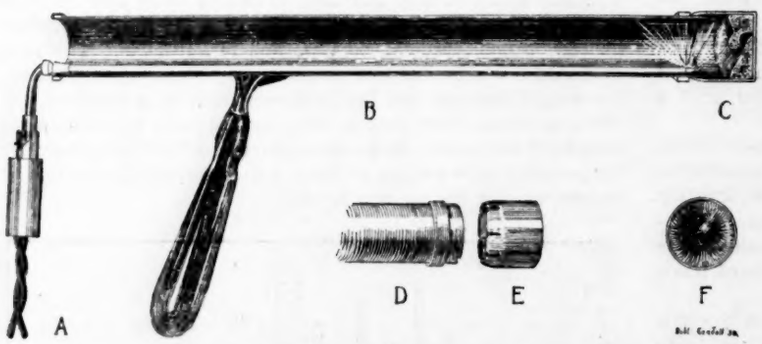
4401 Market Street.

THE TEACHING OF LOWER BOWEL DISORDERS BY MEANS OF LIFELIKE AND LIFE-SIZED MODELS

A NEW METHOD *

MOSES PAULSON, M.D., BALTIMORE
Instructor in Clinical Medicine, Johns Hopkins University

From the standpoint of both teacher and medical student, the actual anatomic presentation of lower bowel disorders in living human subjects is unsatisfactory. In many medical schools where material is limited and the gastro-intestinal and proctoscopic clinics are not particularly well developed, students may see few proctosigmoidoscopic pictures demonstrated during their entire undergraduate careers. Even under the best conditions, where ample material and facilities as well as properly organized instruction prevails, there is difficulty at times in securing particularly desired cases for teaching. It is not an odd commentary to relate that, when cases especially suited for teaching purposes are available, students frequently are not at hand. Besides, it is almost impossible to have access to a group of cases presenting the whole gamut of lower intestinal conditions at one and the same time for demonstration purposes.



A, cord, light carrier and bulb; *B*, cross-section of model sigmoidoscope; *C*, cross-section of cap containing life-sized and lifelike reproduction of lower bowel condition being demonstrated, in this case that of a polyp; *D*, the distal end of the model sigmoidoscope—lateral view; *E*, lateral view of the cap; *F*, full view of polyp at base of cap as seen through model sigmoidoscope.

It was in order to obviate these difficulties that the preparation of a series of life-sized and lifelike models representative of the various conditions as seen through a proctoscope or sigmoidoscope in living human beings occurred to me and was undertaken. The use of models as an aid in the teaching of anatomy and embryology is not new. Even in courses in pathology and in surgery models are used to some extent;[1] but, so far as I can determine, the application of this method for the purpose herein described is new.

Through the courtesy of Dr. Dean Lewis, professor of surgery at Johns Hopkins, I was enabled to secure the services of Dr. Vladimir Fortuanato of the Department of Surgery, who has done the actual modeling. I cannot describe the work of Dr. Fortuanato better than Johnson[2] has: "Dr. Fortuanato has developed a technic by which he can prepare models which are as true to life as it would seem possible to make them. His models comprise faithfulness of reproduction in form, color and texture as well as durability. They must be seen to be appreciated." I might add that there are in our institution several commercial products of anatomic and surgical models, but Fortuanato's work remains to be equaled.

The following devices for the teaching of lower bowel disorders have been prepared:

Brass tubing of the diameter of the average sigmoidoscope was secured; it was then cut to equal the length of a sigmoidoscope. This tube was used as a model sigmoidoscope. A handle was soldered on for convenience (*B* in the illustration).

To represent the intestinal conditions seen through a proctoscope or sigmoidoscope in the living, a number a caplike devices were made, each of which contained a lifelike and life-sized model of the disease at a definite point in the rectum or lower sigmoid. The caps were prepared by cutting brass tubing of a diameter somewhat in excess of that of the model sigmoidoscope in lengths of about 2.5 cm. To one end was soldered a brass disk of the same circumference. These then presented a caplike appearance; hence the designation "cap." Next, each cap was cut in its longest axis 3 mm. from its open end at several equidistant points so as to permit the bending of the cap toward the center from its open end in order to make the diameter for this distance of 3 mm. somewhat narrower than the remainder of the cap (*E*). This metal at the cut points of the cap had a degree of spring to it which permitted it to slip over and to fit snugly the distal end of the model sigmoidoscope. The model of the rectal or sigmoidal involvement is molded in the bottom of the cap. Its circumference is that of the cap and its depth, not exceeding 1 cm., varied in accordance with the condition presented. The models may be made of colored wax (*C* and *F*).

With the cap placed in its proper position, the lighting arrangement used is that employed in distally illuminated sigmoidoscopes. Briefly, a dry cell battery container is attached, by means of a cord, to a light carrier with a number 3 bulb, the total length of which is not in excess of 10 inches. The entire length of the light carrier[3] is introduced through the open or proximal end of the model sigmoidoscope (*A*). The observer now sees a lifelike and life-sized reproduction of the intestinal condition in the living as noted through a proctoscope or sigmoidoscope (*A*, *B* and *C*).

The obvious advantage of this method of demonstration lies in the fact that the various lower intestinal involvements can be presented almost simultaneously whenever needed without concern to the presence of human material, but more especially to its absence.

Our models at present consist of various reproductions of the normal rectum and sigmoid in the living as seen through a proctoscope or sigmoidoscope, as well as those of bacillary dysentery, idiopathic ulcerative colitis, rectal polypi, rectal and sigmoidal malignant growths, so-called mucous colitis and hemorrhoids. Those of the amebic and tuberculous colitides are in preparation.

SUMMARY

The teaching value of models in embryology, anatomy, pathology and some branches of surgery has been demonstrated. The application of this principle has been made in the teaching of lower intestinal involvements as seen through a proctoscope or sigmoidoscope for the first time, and its success, in our hands, is established. These models lend themselves well to individual and group teaching. The obvious advantage lies in the fact that the various rectal and sigmoidal conditions can be presented almost simultaneously without regard to the presence of human material.

401-402 Medical Arts Building.

* From the Department of Medicine, Gastro-Intestinal Clinic, Johns Hopkins Hospital and University School of Medicine.

1. Johnson, F. P.: The Use of Wax Models in the Teaching of Surgery, Surg. Gynec. Obst. 38: 682-687 (May) 1924.

2. Johnson, F. P. (footnote 1) p. 682.

3. Cord and light carrier patented by the Electro Surgical Instrument Company, Rochester, N. Y.

LOCAL INSULIN REACTIONS*

MARTIN LASERSOHN, M.D., RICHMOND, VA.
Associate in Medicine, Medical College of Virginia

Reactions in addition to those of a hypoglycemic nature were not unusual in the early period of insulin administration when larger amounts of protein had to be injected along with the hormone itself. Methods of purification and concentration were soon discovered, however, and, as a result, reactions other than those accompanying overdosage have become a rarity. What the outlook regarding such an occurrence is in a case characterized by local reaction is demonstrated by the following report of a patient referred by Dr. M. Pierce Rucker of this city, Nov. 13, 1929:

History and Clinical Course.—A white woman, aged 28, married, was found to have diabetes mellitus. The onset of symptoms dated back about three weeks. Twenty-four hour specimens of urine showed a large amount of sugar, and tests for acetone and diacetic acid were also positive. The maximum blood sugar obtained was 333 mg. per hundred cubic centimeters of blood. The patient was given a diet consisting of 50 Gm. of protein, 150 Gm. of fat, and 60 Gm. of carbohydrate. She was taught how to administer insulin to herself and advised to take 10 units daily before the noon meal. On this regimen she improved rapidly, so that an increase in her food intake could be made on Dec. 7, 1929, and again on Feb. 27, 1930. Jan. 8, 1930, the insulin was reduced to 5 units daily, and on January 23 it was discontinued. The clinical course of the patient has been followed since the omission of the insulin and it has been found that she can remain aglycosuric and that the blood sugar can be maintained at a normal level on a diet having an approximate dextrose equivalent of 150 Gm. Above this amount, dextrose makes its appearance in the urine.

Local Insulin Reactions.—The first injection of insulin was given, Nov. 19, 1929. Approximately twelve hours later the patient was aware of some itching at the site of the injection. She noticed some erythema; this was followed by a raised, pink and rather hard lesion involving the skin. With subsequent injections, similar local reactions were noticed which started about twelve hours after injection, reached their greatest diameter and elevation within twenty-four hours, and disappeared in about three days. The patient had been injecting the insulin into the thighs, and a reaction was noted following each injection. She had been using insulin-Lilly, U 20. Portions of the ampule in use were injected into each of five diabetic patients. These patients showed no reaction. The patient was advised to use insulin-Squibb, U 20; she experienced local reactions of the same nature from this preparation also.

December 3, I injected 5 units of insulin-Lilly, U 20, in the upper arm and 5 units in the thigh. There was no immediate reaction. Examination twenty-four hours later revealed an elevated, pink area which measured 1.5 by 1.5 cm. at the site of injection in the thigh. It was not tender. Below this area, where injections were being made by the patient, the skin appeared inflamed. It was hot and indurated over an area measuring 10 by 9 cm. and represented the confluent lesions of the daily injections. The nature of these reactions suggested, at first, a low grade, infection of the skin to a dermatologic colleague. A reaction similar to the one noted in the thigh was observed at the site of the injection made in the arm.

A week later, December 10, the patient reported that the lesions which followed each injection were decreasing in size and that they did not appear as red or last as long. Within the course of another week, another interesting change was noted. The reactions now made their appearance within two or three hours and subsided within one or two hours after their full size had been attained. Later there was a further reduction in the size of the lesions and they made their appearance sooner and lasted only fifteen to thirty minutes. Thus, on December 23 I noted an almost immediate reaction following an injection of 10 units. The lesion now was pale and it had the appearance of a typical urticarial wheal with pseudopods. It was about 1 cm. in diameter and disappeared within twenty minutes. In the course of time the reactions to insulin gradually became less noticeable. For about two weeks prior to the time the insulin was discontinued, Jan. 23, 1930, there had been no reactions whatever. At no time did the patient show any generalized signs or symptoms of protein hypersensitiveness.

COMMENT

Tuft[1] has recently reviewed the literature on insulin hypersensitiveness and reports a series of immunologic studies made in a case characterized by generalized urticaria and edema. He also adds a case in which there was only a local reaction following insulin injections. He notes a striking similarity between the manifestations of hypersensitiveness to insulin, serum disease and drugs and places these three forms of hypersensitiveness in the group of acquired or induced hypersensitiveness. Desensitization or reduction in the dosage of insulin may be necessary in these cases with generalized urticaria and edema.

The mechanism of production of the local form of reaction is not understood. Some writers believe it to be a local anaphylactic manifestation, while Tuft believes that it is dependent on some physical or chemical rather than biologic characteristic of the preparation used. Attempts at desensitization or reduction in dosage are not necessary with this group. In the course of time reactions disappear, as is demonstrated by this case and by the few others that have been reported.

408 Professional Building.

* From the Department of Internal Medicine, Medical College of Virginia, Hospital Division.

1. Tuft, Louis: Insulin Hypersensitiveness: Immunologic Considerations and Case Reports, Am. J. M. Sc. **176**: 707 (Nov.) 1928.

REACTION TO PANTOPON (PANTOPIUM HYDROCHLORICUM) SIMULATING PROTEIN SENSITIZATION

H. M. WINANS, M.D., DALLAS, TEXAS

In the course of hypodermic injection of various drugs, it is not unusual to encounter a local reaction at the site of injection. In the case reported here, however, there was not only a local reaction but a severe constitutional one which has apparently not been reported previously from the use of this drug.

REPORT OF CASE

Mrs. E., aged 34, a housewife, had an attack of dysentery which resembled in every way similar cases that had been epidemic in this locality at the time. After two days she was somewhat improved, but she had lost considerable sleep and it was decided to give her a hypodermic to secure rest. Previous treatment had been dietary, with the use of milk of bismuth. She stated that morphine disagreed with her but described its effect as being only exciting and nauseating. She was therefore given one-sixth grain (11 mg.) of pantopon (pantopium hydrochloricum) hypodermically. In a few minutes a large wheal appeared at the site of injection. This rapidly increased in size until it was 5 cm. in diameter and was raised above the surrounding surface about 1 cm. There was a wide zone of erythema around the area of injection. The patient complained of pain in the back of her neck and in the epigastrium and of difficulty in breathing. The hands and feet became cyanosed and cold. The pulse disappeared at the wrist and she became comatose. Epinephrine hydrochloride solution, 1 cc., was given hypodermically. This was followed by rapid improvement in her condition. At the end of one hour she was much better and the following day showed no ill effects either locally or constitutionally.

COMMENT

This case differed little in its manifestations from reactions seen in protein sensitive individuals. Pantopon does not give a biuret reaction. A letter from the Hoffman-LaRoche Company states that there is no protein in the tablets but simply the alkaloids of opium as the hydrochloride together with mannose and lactose. So far no record of a biologic test for protein can be found. This case is reported to show that pantopon can probably not be used in individuals who give a history of idiosyncrasy to morphine.

2703 Oak Lawn Avenue.

Council on Physical Therapy

THE COUNCIL ON PHYSICAL THERAPY OF THE AMERICAN MEDICAL ASSOCIATION HAS ADOPTED THE FOLLOWING REPORT.

H. J. HOLMQUEST, Secretary.

THE DAVIS INHALATOR ACCEPTABLE

The Davis Inhalator, manufactured and submitted by Bullard-Davis, Inc., New York, is described as a portable apparatus designed to assist physicians in the administration of oxygen or a mixture of oxygen and 5 per cent carbon dioxide in resuscitation in various forms of asphyxia. Compressed gases are contained in tanks and by a reducing valve may be delivered at the desired pressure through a breathing bag and mask as demanded by artificial or natural breathing of the patient. A valve arrangement assures a unidirectional flow, and, when desired, air may be delivered to the patient. The apparatus meets the requirements of inhalators of approved standard and incorporates devices which make for flexibility, adaptability and safety. No undue claims are made for the apparatus, and evidence submitted indicates that it has proved a valuable adjuvant to the treatment of asphyxiated patients.

The Council on Physical Therapy declares the Davis Inhalator acceptable for inclusion in its list of accepted devices.

Council on Pharmacy and Chemistry

NEW AND NONOFFICIAL REMEDIES

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION.

W. A. PUCKNER, Secretary.

COD LIVER OIL WITH VIOSTEROL 5 D (See New and Nonofficial Remedies, 1930, p. 257).

Mead's 5 D Cod Liver Oil with Viosterol.—A brand of cod liver oil with viosterol 5 D, N. N. R.

Manufactured by Mead Johnson & Co., Evansville, Ind., under U. S. patent 1,680,818 (Aug. 14, 1928; expires 1945) under license of the Wisconsin Alumni Research Foundation.

Irradiated ergosterol, prepared by the method described under Mead's viosterol in oil 100 D, is added to cod liver oil and the finished product is required to have a vitamin A potency of not less than 500 pharmacopeial units and the vitamin D potency of cod liver oil with viosterol 5 D, N. N. R.

SIOMINE.—Hexamethylenetetramine tetraiodide $(CH_2)_6N_4I_4$. Siomine contains 78.5 per cent of iodine.

Actions and Uses.—Siomine is decomposed in the intestine with formation of hexamethylenetetramine and iodide, the rate of absorption and excretion being essentially the same as that of inorganic iodides. It, therefore, produces the effects of ordinary iodides, from which it differs only in that it can be administered in solid form.

No therapeutic claims are made for the hexamethylenetetramine component of siomine, this being present only to render the substance insoluble.

While ordinarily the hexamethylenetetramine content of siomine may be ignored, the drug should be discontinued if any signs of hexamethylenetetramine intolerance arises, such as vesical irritation or hematuria.

Dosage.—The same as that of potassium iodide. Siomine is best administered in capsule form during or immediately following meals.

Manufactured by Pitman-Moore Company, Indianapolis. U. S. patent 1,226,394 (May 15, 1917; expires 1934). U. S. trademark 107,998.

Siomine Capsules, ½ Grain: siomine ½ grain (0.03 Gm.) and lactose 4½ grains (0.29 Gm.).

Siomine Capsules, 1 Grain: siomine 1 grain (0.06 Gm.) and lactose 4 grains (0.26 Gm.).

Siomine Capsules, 2 Grains: siomine 2 grains (0.13 Gm.) and lactose 3 grains (0.19 Gm.).

Siomine Capsules, 5 Grains: siomine 5 grains (0.3 Gm.) and lactose 2 grains (0.13 Gm.).

Hexamethylenamine tetraiodide was described by Herton in 1888, and a process essentially the same as that used for the preparation of siomine is described by Sugiura and Falk (*Biochem. Bull.* **5**: 18, 1916). Under the name siomine, it was first proposed for therapeutic use.

Siomine is a red powder, having a slight, but characteristic, odor and taste. When heated to 138 C., it decomposes with violence.

Siomine is slightly soluble in acetone, alcohol, chloroform, carbon disulphide and ether (with partial decomposition). It is almost insoluble in water, but dissolves with decomposition in aqueous solutions of alkali iodides, of sodium thiosulphate and in diluted hydrochloric acid.

Heat 5 Gm. of siomine with 15 cc. of diluted sulphuric acid: first, vapors of iodine (recognized by their color and effect on starch paper) are evolved; later, formaldehyde is given off (recognized by its odor and the blackening of paper moistened with silver ammonium nitrate solution). Heat the siomine-sulphuric acid mixture until it is colorless; supersaturate with potassium hydroxide solution: ammonia is evolved (recognized by its odor and effect on red litmus paper). To 0.5 Gm. of siomine add a drop of strong sulphuric acid: decomposition occurs with evolution of brown fumes.

Warm 0.5 Gm. of siomine with 0.5 cc. of water until a clear solution results: the addition of a few drops of barium chloride solution does not produce a precipitate (*sulphates*).

Incinerate a weighed quantity of siomine: not more than 0.03 per cent of ash remains.

EPHEDRINE SULPHATE (See New and Nonofficial Remedies, 1930, p. 170).

The following dosage form has been accepted:

Ephedrine Nasal Jelly-Maltbie: Ephedrine sulphate-N. N. R. 1 per cent, menthol 0.25 per cent, and sodium benzoate 0.5 per cent in a glycerite of tragacanth base.

Prepared by The Maltbie Chemical Company, Newark, N. J.

EPHEDRINE HYDROCHLORIDE (See New and Nonofficial Remedies, 1930, p. 169).

Ephedrine Hydrochloride-P. D. & Co.—A brand of ephedrine hydrochloride-N. N. R.

Manufactured by Parke, Davis & Company, Detroit. No U. S. patent or trademark.

Capsules Ephedrine Hydrochloride-P. D. & Co., ⅜ grain.
Capsules Ephedrine Hydrochloride-P. D. & Co., ¾ grain.

PYRAMIDON (See New and Nonofficial Remedies, 1930, p. 314).

The following dosage forms have been accepted:

Elixir of Pyramidon: Each 4 cc. (one fluidrachm) contains pyramidon, 0.162 Gm. (2½ grains) in a menstruum containing alcohol 20 per cent.

Pyramidon Tablets, 1½ grains.

THIO-BISMOL.—Sodium bismuth thioglycollate.—A salt formed by the interaction of sodium thioglycollate and bismuth hydroxide. The product has the general formula $Bi(SCH_2CO_2Na)_3$, though it may differ slightly in composition from this formula. It contains approximately 38 per cent of bismuth.

Actions and Uses.—Thio-bismol is proposed as a means of obtaining the systemic effects of bismuth in the treatment of syphilis (see general article, Bismuth Compounds, New and Nonofficial Remedies, 1930, p. 94); it is a water soluble compound, readily absorbable, and produces relatively little local injury.

Dosage.—For the average adult, 0.2 Gm. (3 grains) administered intramuscularly in a course of six weekly doses, unless interrupted by evidence of saturation such as darkening of the gums or other toxic symptoms.

Manufactured by Parke, Davis & Company, Detroit. U. S. patent applied for. U. S. trademark 220,808.

Ampoules of Thio-Bismol: Each ampule contains 0.2 Gm. (3 grains) of thio-bismol, to be dissolved in 1 cc. of sterile distilled water before administration.

Thio-bismol occurs as a canary yellow hygroscopic noncrystalline but granular substance possessing a garlic-like odor. It is freely soluble in water but the solutions are not stable.

Add 1 drop of diluted hydrochloric acid to 1 cc. of a 2 per cent solution of thio-bismol solution: a heavy yellow precipitate separates that dissolves on the addition of another drop of acid. Add several drops of acetic acid to 1 cc. of a 2 per cent solution of thio-bismol: no precipitate forms. Add 3 drops of ammonia water to 1 cc. of a 2 per cent solution: a slight change of color and a slight precipitate occurs within one-half hour. Add 1 drop of sodium hydroxide solution to 1 cc. of a 2 per cent solution of thio-bismol: a precipitate forms, insoluble in excess of reagent. Add several drops of copper sulphate solution to 1 cc. of a 2 per cent solution of thio-bismol: a precipitate forms that gives the suspension a murky greenish brown appearance. The precipitate dissolves in sodium hydroxide solution, leaving a yellow solution (*distinction from sodium or potassium bismuth tartrates*). Gently ignite an intimate mixture containing about 0.2 Gm. each of thio-bismol and sodium carbonate, cool, add 3 cc. of water, add sufficient diluted hydrochloric acid to make the solution acid and boil: lead acetate paper held in the mouth of the test tube blackens.

Extract 0.2 Gm. of thio-bismol with 10 cc. of chloroform or ether: no residue remains after the evaporation of the solvent (*free thioglycollic acid*). To 1 cc. of a 2 per cent solution of thio-bismol add sufficient diluted hydrochloric acid to just dissolve the precipitate first formed, add several drops of barium chloride solution: a precipitate does not appear.

Heat an accurately weighed sample of thio-bismol weighing about 1 Gm. in a 100 C. oven for twenty-four hours, cool in a desiccator, and weigh: the sample does not lose more than 5 per cent in weight. Transfer an accurately weighed sample of thio-bismol weighing about 0.4 Gm. to an Erlenmeyer flask, dissolve in 100 cc. of water, add enough diluted hydrochloric acid to just dissolve the precipitate first formed, saturate with hydrogen sulphide until the bismuth is completely precipitated as bismuth sulphide, collect the precipitate in a prepared gooch crucible, wash with water, alcohol, ether, chloroform and ether in the order named, dry at 100 C., cool in a desiccator and weigh: the bismuth calculated from the bismuth sulphide is equivalent to not less than 37 per cent nor more than 39.5 per cent in the original calculated to the dry substance. Evaporate the filtrate from the bismuth determination to a small bulk, transfer to a platinum dish, add sulphuric acid, evaporate to dryness; add a few drops of sulphuric acid, evaporate to dryness again, volatilize a small amount of ammonium carbonate from the dish, cool in a desiccator and weigh: the sodium calculated from the weight of sodium sulphate is not less than 12.23 per cent nor more than 13.04 per cent in the original substance calculated to the dry substance.

REPORTS OF THE COUNCIL

THE COUNCIL HAS AUTHORIZED PUBLICATION OF THE FOLLOWING REPORTS.

W. A. PUCKNER, Secretary.

DESICCATED PITUITARY PREPARATIONS OMITTED FROM N. N. R.

In 1928 the Council discussed the lack of acceptable evidence for the value of pituitary preparations administered by mouth and concluded that extensive clinical experience had failed to establish the value of desiccated pituitary preparations for oral administration. At that time the Council decided to omit such preparations when the period for the acceptance of the products included in New and Nonofficial Remedies should expire, unless new evidence became available in the meantime permitting a different action. This period having expired, and no new evidence of a favorable nature having become available, the Council directed the omission of all desiccated pituitary preparations with their dosage forms now included in New and Nonofficial Remedies, namely: Desiccated Pituitary Body-Armour, Desiccated Pituitary Substance (Anterior Lobe)-Armour, Desiccated Pituitary Substance (Posterior Lobe)-Armour, Anterior Pituitary Desiccated-Lederle, Posterior Pituitary Desiccated-Lederle, Whole Pituitary Desiccated-Lederle, Pituitary Body Anterior Lobe Desiccated-Mulford, Anterior Pituitary-P. M. Co. Desiccated, Pituitary Substance-P. M. Co. Desiccated, and Posterior Pituitary-P. M. Co. Desiccated.

LYDIN NOT ACCEPTABLE FOR N. N. R.

"Lydin," a product of the Harrower Laboratory, Inc., is claimed to be "a physiological sex-stimulant of note" consisting of a combination of "the male sex hormone" with "the anti-sterility fat-soluble vitamin-E." It is marketed in the form of capsules for oral administration and is recommended for use in the treatment of impotence, with the suggestion that "the indications are too well known to be enumerated."

The appended Report on the Biologic Assay of "Lydin," by T. F. Gallagher, was sent to the Council by F. C. Koch, head of the Department of Physiological Chemistry and Pharmacology of the University of Chicago. This study shows that when administered by mouth "Lydin" is without effect as measured on capons by the comb growth method or on guinea-pigs as measured by the spermatozoa motility test.

Previous to the time of Brown-Séquard, folklore attached to the sex glands some mystical power associated with the regaining of lost strength and vitality. Among savage tribes it was even the custom to eat these portions of the bodies of the vanquished with the idea that the conqueror would thereby get the strength of those who had died. Brown-Séquard was convinced that an extract of the testes promoted the vitality, but his experiments were never confirmed or accepted.

It is quite possible that active extracts of the testes might be prepared, but the evidence thus far is not sufficient to support the view that any such extract has been prepared.

In the meantime, the available knowledge of the glands of internal secretion has aroused commercial promoters to the exploitation of all sorts of glandular extracts and combinations without an iota of evidence to show that any preparation of extracts of the testes, singly or in combination, has ever been shown to have the slightest effect on the human body when given by mouth.

The psychology of symbolism offers sufficient basis for the manner in which old men succumb to extravagant advertising in this field.

Report on the Biologic Assay of "Lydin"

T. F. GALLAGHER

Feb. 3, 1930, a quantity of "Lydin" was purchased from the Chicago branch office of the Harrower Laboratories. The material on examination proved to be a light brown powder, in appearance suggestive of dried testis substance.

February 8, three capons were fed one capsule each three times daily. This daily feeding was continued until Feb. 18, 1930. Since no response in comb growth was obtained, the daily dose was increased to three capsules given three times daily—a total of nine capsules per bird per day. March 10, feeding was discontinued and comb measurements obtained. The following table shows the results:

Date	Bird No.	Dosage	Length of Comb	Height of Comb
Feb. 8.....	991	3 cap./day	5.6 cm.	3.0 cm.
Feb. 18.....	991	9 cap./day	5.6 cm.	3.0 cm.
March 10.....	991	9 cap./day	5.5 cm.	2.9 cm.
Feb. 8.....	559	3 cap./day	6.4 cm.	2.9 cm.
Feb. 18.....	559	9 cap./day	6.3 cm.	2.8 cm.
March 10.....	559	9 cap./day	6.3 cm.	2.6 cm.
Feb. 8.....	538	3 cap./day	5.9 cm.	3.0 cm.
Feb. 18.....	538	9 cap./day	5.9 cm.	2.9 cm.
March 10.....	538	9 cap./day	5.8 cm.	2.9 cm.

Following the "Lydin" period as a control, the capons were injected daily, March 21-26, with an active testicular extract prepared by T. F. Gallagher according to the method of Gallagher and Koch (*J. Biol. Chem.* **84**:495 [Nov.] 1929). The results are thus summarized:

	Date	Bird No.	Dosage	Length of Comb	Height of Comb
Prep. G5					
	March 21..	991	0.12 mg./day	5.5 cm.	2.9 cm.
	March 26..	991	0.12 mg./day	5.8 cm.	3.1 cm.
	March 21..	559	0.12 mg./day	6.3 cm.	2.6 cm.
	March 26..	559	0.12 mg./day	6.6 cm.	2.9 cm.
Prep. XUKI					
	March 21..	538	0.4 mg./day	5.8 cm.	2.9 cm.
	March 26..	538	0.4 mg./day	6.5 cm.	3.3 cm.

In order to obviate any objection to the use of a capon on the ground of a difference between the mammal and the fowl, a separate assay on the guinea-pig was conducted by C. R. Moore. February 22, double epididymal isolation was performed on two healthy adult guinea-pigs. February 23, feeding one capsule of "Lydin" per pig daily was begun and continued without interruption until March 27. The animals were killed, March 28, and the epididymides examined for motile spermatozoa. Millions of dead spermatozoa were found with not a single trace of motility evident. The animals were in excellent condition, no scrotal thickening nor adhesions having developed.

Under comparable conditions, the length of motility of spermatozoa in the isolated epididymis has been shown to be a function of the testis hormone. Moore and McGee (*Am. J. Physiol.* **87**:436 [Dec.] 1928) have demonstrated the prolongation of motility from the expected twenty-three days to fifty-six days by the injection of active testicular extract prepared by McGee. The administration of "Lydin" by mouth in this case failed to prolong the life of the spermatozoa to thirty-three days.

Our conclusions are that "Lydin" taken by mouth in large doses is inactive in terms of the comb growth method in the capon and the spermatozoa motility test in the guinea-pig, both of which tests are recognized as adequate assays for the male sex hormone.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

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SATURDAY, JULY 19, 1930

OBESITY AND DIABETES

That diabetes develops more frequently in overweight than in underweight persons has long been apparent to the clinician. French writers recognize the association in the use of the term *diabète gras* for the diabetes of the obese. Diabetes develops relatively rarely after twenty years of age in those who are underweight. Its incidence increases progressively with age in the obese. Joslin [1] has emphasized the relation of obesity to diabetes and by his statistical studies has raised the association of the two conditions from the realm of clinical impression to that of established fact. In 1,063 cases of diabetes, the latter condition was preceded by obesity in 40 per cent. Joslin believes that the percentage would have been doubled by more accurate data. A series of 1,000 consecutive cases of diabetes studied at the Nutrition Laboratory of the Carnegie Institution in Boston included no persons who were 31 per cent or more underweight, and only five who were from 21 to 30 per cent underweight; 273 were 31 per cent or more overweight, and 169 were from 21 to 30 per cent overweight. Diabetes occurred 79 times as frequently in those 21 per cent or more overweight as in those 21 per cent or more underweight. In the opinion of Joslin, many of the supposed causes of diabetes find their explanation in their tendency to cause obesity.

How is the association of the two states, the obese and the diabetic, to be explained? Diabetes of the obese usually develops during the fourth decade of life or later and as a rule comes on insidiously. It is conceivable that the disturbance of carbohydrate metabolism is at first so mild as to lead to storage of fat. The fact that the obesity usually precedes by many years the onset of diabetes does not lend support to such an assumption. Another possibility, also speculative, is that some abnormality of metabolism of undetermined nature is the cause of both the obesity and the diabetes. Against this assumption is the fact that the obesity that precedes diabetes is not apparently due to metabolic abnormality but to a disproportion between food intake and expenditure of energy. Although diabetes and obesity become associated in the same individual, they are probably not concomitant manifestations of a nutritional disturbance common to the two conditions. An obese state, due simply to overindulgence in food, precedes the diabetic condition with such frequency and by such a number of years as to make it appear probable that the obesity is a causative factor in the diabetes rather than that the two conditions are due to the same cause.

If an excessive intake of food that leads to overweight is a cause of diabetes, how does the cause produce its effect? The constant excessive consumption of food might lead to exhaustion of the islet tissue of the pancreas. Such a speculation would have a morphologic basis of fact if hyaline or fibrotic obliteration of the islands were preceded by or associated with morphologic changes that might be interpreted as due to exhaustion. Such pathologic conditions of the islands as are seen in the pancreas of the obese patient with diabetes are, however, no different than those seen in the pancreas of the diabetic patient who has never been obese. There is no morphologic evidence for ascribing to obesity a specific action in causing involvement of the islands of Langerhans.

Is there any other kind of change in the pancreas that might be ascribed to obesity and that might be a cause of diabetes? The interstitial tissue of the pancreas of the overweight person may contain such large amounts of fat that the term lipomatosis has been applied to the condition. In the microscopic examination of such a pancreas, individual lobules of the parenchyma may be seen widely separated from one another by adipose tissue. Many such lobules appear reduced in size, sometimes to an islet with little surrounding acinous tissue. That there is not merely an apparent but an actual reduction of the parenchyma of the lipomatous pancreas has been shown by Baló.[2] A sufficient replacement of pancreatic parenchyma by adipose tissue furnishes a morphologic basis for diabetes, especially if such reduction is associated with a continuing overconsumption of food. That lipomatosis of the pancreas may be a factor in diabetes is suggested in the analysis of 147 necropsies of diabetic patients by Gibb and Logan [3] of New York. In this group, lipomatosis of the pancreas was not seen in those dying during the second and third decades of life. It was noted once in the fourth decade, in 22 per cent of those of the fifth decade, in 44 per cent of those of the sixth decade, and in 52 per cent of those of the seventh decade. Unfortunately there are no data on the degree of obesity that may have existed before diabetes developed. The authors therefore did not

1. Joslin, E. P.: Treatment of Diabetes Mellitus, Philadelphia, Lea & Febiger, 1923.

2. Baló, J.: Die Lipomatose der Bauchspeicheldrüse und deren Bezug zur allgemeinen Fettsucht, Virchows Arch. f. path. Anat. **273**: 320, 1929.

3. Gibb, W. F., Jr., and Logan, V. W.: Diabetes Mellitus: A Study of 147 Autopsies, Arch. Int. Med. **43**: 376 (March) 1929.

correlate the lipomatous state of the pancreas with obesity but considered it a late result of interstitial pancreatitis. That the latter process may be a factor in the replacement of parenchyma by fat may find support in the greater frequency in the obese of cholelithiasis and associated biliary tract disease, conditions that may lead to chronic pancreatitis. In Gibb and Logan's series of cases, however, interstitial pancreatitis had already reached an incidence of 44 per cent during the fourth decade and remained stationary at 64 per cent during each of the succeeding three decades. During the latter period lipomatosis progressively increased, as does diabetes in those who are overweight. The mere presence of fat in the interstitial tissue of the pancreas does not of itself mean diabetes. In the analysis of 156 consecutive necropsies of nondiabetic patients made by Warren [4] of Boston, pancreatic lipomatosis was not noted in any instance before the fifth decade. It was seen in 19 per cent of those dying in the fifth decade, in 28 per cent of those in the sixth decade, and in 26 per cent of those in the seventh decade. Here again there is evident the deposition of fat in the pancreas during those years when the tendency to embonpoint manifests itself. The incidence of lipomatosis is, however, considerably lower and rises less steadily with advancing years than in Gibb and Logan's series. Warren says: "Whatever the mechanism of development of pancreatic lipomatosis may be in diabetic persons, in this series it is much more intimately related to the amount of body fat than to atrophy or fibrosis of the pancreas."

It appears more reasonable to assume that obesity leads to pancreatic lipomatosis and that the latter causes disappearance of parenchyma than that parenchymal atrophy is the cause of fatty infiltration. There is morphologic evidence that the deposition of fat within the pancreas influences deleteriously the function of the organ in ways other than a mere passive diminution in the amount of parenchyma. Truhart, according to Kup,[5] detected multiple fat necroses in the lipomatous pancreas of 50 per cent of obese persons. Lipomatosis occurs in species of animals other than man. One species, the hog, lends itself especially well to study of the possible effects of increase of fat within the pancreas, because the condition of lipomatosis is brought about in a relatively short time by the fattening of swine for slaughter. Kup examined microscopically the pancreas of 110 hogs fattened for market and of sixty-one animals of the same breed that had not undergone the fattening process. Multiple necroses were detected in the pancreatic fat of 42 per cent of the fattened animals and in not a single instance in the lean animals. The necroses in any single pancreas were of different ages, indicating that they were due to some factor acting over a considerable period of time. Kup believes deposition of fat in the interstitial tissue precedes separation of the lobules by the adipose tissue, and that pressure on the lobular ducts by the adipose tissue, stasis of acinous secretion, ascending infection, necrosis of acini, liberation of pancreatic secretion, and fat necrosis describes the sequence of events. For the human being the established facts are that obesity leads to lipomatosis of the pancreas, that the latter condition is associated with a diminution of parenchymal tissue, and that necrosis of the interstitial fat is not infrequent. Kup's investigations would make lipomatosis an important and active factor in the causation of the fat necroses and in the reduction of the amount of pancreatic tissue, furnishing a morphologic basis for the clinical association of obesity and diabetes. The importance of this association has been expressed by Joslin [1] in the following words: "Diabetes . . . is largely a penalty of obesity, and the greater the obesity the more likely is Nature to enforce it. The sooner this is realized by physicians and the laity, the sooner will the advancing frequency of diabetes be checked. The penalty of taking too much alcohol is well known and a drunkard is looked on with pity or contempt. Rarely persons who become fat deserve pity because of a real tendency to put on weight despite moderate eating, but usually most should be placed in somewhat the same category as the alcoholic. In the next generation one may be almost ashamed to have diabetes."

4. Warren, Shields: The Pathology of the Pancreas in Nondiabetic Persons: A Study of 156 Consecutive Autopsies on Nondiabetic Patients, Arch. Int. Med. **44**: 663 (Nov.) 1929.

5. Kup, J.: Die Wirkung der Mästung auf die Bauchspeicheldrüse, Beitr. z. path. Anat. u. z. allg. Path. **83**: 641 (Jan. 15) 1930.

TESTICULAR GRAFTING

The longing for the "fountain of youth" that actuated many a traveler in days of yore has its counterpart today in the desire for a rejuvenating hormone. This urge has perhaps been intensified of late by the circumstance that so-called sex hormones have actually been discovered, isolated in some instances in a state of comparative chemical purity, and thus at least permitted to emerge from pseudoscience and charlatanism into the possibilities of physiologic respectability. The waning hopes of the disillusioned devotees are being rekindled into a flame of great expectations. It may be helpful, therefore, to take stock of the available facts so as to separate them from current fancies. At the International Physiological Congress in Boston last summer, Voronoff [1] boldly reported in relation to his widely proclaimed testicular grafting that, thanks to ten years of observation of a number of animals and men in whom such grafts had been made, the successive phenomenal results of the transplantation are now definitely established. The alleged results were no notable change during the first two months; then a gradual improvement in muscular strength; better appetite; better working of organs hitherto enfeebled;

1. Voronoff, S., and Alexandrescu, G.: Physiological Results of Testicular Grafting in Relation to the Histological Aspect of the Grafts Removed at Intervals During Four and a Half Years Following the Operation, Am. J. Physiol. **90**: 547 (Oct.) 1929.

and, in the case of men, greater capacity for intellectual work; lower blood pressure, and better metabolism. These symptoms are marked during the first two to three years but fall off gradually until, in the fifth year, they disappear.

In a recent issue of THE JOURNAL, Moore [2] referred to the astounding claims that are prevalent in this field. He said:

> The absence of dependable indexes for the alleged "hypogonadism" in man, or the inability to utilize proved indicators for hormone introduction by any means, appears to have caused but little concern to clinicians employing these supposedly remedial measures. Astonishing as it may be, published statements of the effect of hormone introduction, or alleged hormone increases from the intact organs, claim improvements for conditions that fairly well exhaust the ills to which man has fallen heir. Among the imposing array of benefits presumably derived from an increased hormone introduction may be mentioned an increased sex life, better appetite, a feeling of well being, gain in weight, loss in weight, disuse of crutch and cane in decrepit conditions, gray hair turned brown, return of natural vigor, better sleep, increased libido, more regularity in bowel movements, more acute special senses, improvements in memory and mental concentration, rise in blood pressure, improvements in general asthenia, rheumatism, acne vulgaris, neurasthenia, poor vision, asthma, tuberculosis, senility, sex lassitude, impotence, epilepsy, dementia praecox, paranoia, diabetes and locomotor ataxia. . . . The time is long overdue when serious inquiry should be directed to the effects of introducing testis hormone into the organism.

Here is a new reminder that transplants of organs such as the testes tend to become nonviable. The proofs of functional persistence are singularly lacking or unconvincing in the records of human tests. Accordingly, as Moore insists, in the absence of functional incorporation of living tissue the effects from such transplantations, if any, fall necessarily on the transferred nonviable tissue, which undergoes autolysis and resorption, perhaps, accompanied by inflammation, suppuration and sloughing. Moore's studies at the University of Chicago have demonstrated that the autolysis of nonviable testicular grafts does not liberate the secretion in amounts that can be detected by any means at present known. Furthermore, the testis hormone is not stored within the body but is excreted by the kidneys. A continuous supply is necessary to maintain the secondary sex characters in a normal condition.

The occurrence of the male hormone in the urine of young men has been demonstrated by Funk, Harrow and Lejwa.[3] Various workers have isolated a female hormone from the urine of women. Tests have been devised to demonstrate their potency in the respective sexes in promoting development of certain secondary sex characteristics. It seems worth while at this stage of progress to reiterate the conclusion of Moore. "There is no known acceptable evidence that nonviable testis grafts, i. e., grafts that fail to become incorporated within the body and actively secrete, exert any immediate or remote beneficial effect on the host organism."

2. Moore, C. R.: The Physiologic Effects of Nonliving Testis Grafts, J. A. M. A. **94**: 1912 (June 14) 1930.

3. Funk, C.; Harrow, B., and Lejwa, A.: The Male Hormone, Am. J. Physiol. **92**: 440 (March) 1930.

SHOCK

The study of shock was greatly accelerated by the exigencies of the Great War. Master minds of various nations were concentrated on its problems. Numerous answers have been ventured; none of them have afforded complete satisfaction to the various inquirers. It would certainly be rash, if not actually hazardous, to attempt at this time any final solution in these columns. With the multiplication of theories, such a venture becomes increasingly more appalling if not discouraging. Probably a considerable number of somewhat unrelated states are concerned, so that multiple causes need to be dealt with rather than a uniform or individual etiologic situation. The warrant for renewed reference to the subject, however, lies in its intrinsic importance in medical practice; for shock is a hazard of everyday accidents as well as the misfortunes of the battlefield.

It is interesting to review some of the hypotheses that have been formulated to account for the genesis of shock. By the latter for the purposes of this discussion the sudden collapse, or primary shock, that follows reflex inhibition of the heart and a lessening of vascular tone for one reason or another is not concluded. Rather we are concerned with the secondary shock characterized by low blood pressure and other phenomena. There are students of the subject who have maintained that this sort of shock is due to a general relaxation of the large vessels, in direct contrast with others who postulate a marked constriction of the arteries. There are proponents not only of the theory of inhibition but also of fat embolism, acidosis, acapnia, and suprarenal hyperactivity and hypo-activity. It is not easy to reproduce the condition of shock experimentally because anesthesia or other complicating precautions become desirable in studies on animals. Trauma of an extremity has been the favorite method for inducing the effects under consideration; in fact, all such injury to the muscles, even without damage to the bones and liberation of bone marrow, tend to produce a lowering of arterial tension.

Various investigators have believed that such disintegration of a tissue leads to liberation of potent compounds, such as histamine, that profoundly affect blood pressure. As Cannon and Bayliss expressed this, the injured muscle would produce metabolites, which, on being absorbed into the blood stream, would indicate their presence by a decrease in blood pressure, with other signs of shock. To this a recent writer, admitting the chemical aspects of the claims, has replied that it is almost certainly true that the amount of hemorrhage which is necessarily associated with such gross injuries would cause some reduction in the blood pressure. The recent experiments of Blalock [1] at the Vanderbilt University in Nashville demonstrated clearly that the blood pressure could not be reduced to a shock

1. Blalock, Alfred: Experimental Shock: The Cause of the Low Blood Pressure Produced by Muscle Injury, Arch. Surg. **20**: 959 (June) 1930.

level by trauma to one of the posterior extremities without causing the loss of a sufficient part of the blood volume into the traumatized area to account for the decline in the pressure. There was a greater proportionate loss of plasma than of red cells, and this accounts for the concentration of the blood elsewhere. The transfusion of blood from one animal in which a low blood pressure has been produced by trauma to an extremity to another animal in which a low blood pressure had been produced by a loss of blood either outside the body or into the tissues of the body resulted in an elevation of the blood pressure in the recipient. This could scarcely be expected to happen if hypotensive metabolites were circulating in the vessels of the traumatized individual. The new experiments are not intended to be the last word on a highly debated subject, the genesis of "secondary shock." They do stress, with the force of experimental proof, the large significance of local losses of blood into the tissues and the unexpected finding that these are frequently large enough to account for marked reductions in blood pressure.

Current Comment

THE TRANSMISSION OF PSITTACOSIS

The etiologic agent responsible for psittacosis, or parrot disease, is apparently not an ordinary bacterium but presumably a filtrable virus. As is so often the case in the study of disease, the discovery of a susceptible experimental animal would greatly facilitate progress. In addition to man and parrots, psittacosis is transferable to certain small birds, notably parrakeets and love-birds. There are, however, various advantages in working with mammals. Mice have been infected and the disease passed in this species in series by means of intraperitoneal injections of emulsions made from a mixture of the liver and spleen of infected animals. The search for other susceptible animals has further been warranted by the desirability of learning what species may act as carriers of the virus. Through the device of intracerebral inoculations of infectious material obtained from diseased parrots, Rivers and Berry [1] of the Hospital of the Rockefeller Institute for Medical Research have been able to infect both rabbits and guinea-pigs. At times there were signs of involvement of the brain, meningitis or encephalitis. As a rule, however, the chief sign of the infection in these animals is an extremely high temperature, from 104 to 108.5 F., occurring two to seven days after inoculation. Such an elevation of temperature is not caused by brain emulsions from normal animals. The virus transmitted through rabbits and guinea-pigs is evidently capable of producing psittacosis in parrots or a disease so similar to psittacosis that at present no difference can be detected. According to Rivers and Berry the pathologic changes in the brain consist mainly of a reaction in the meninges and around the cortical blood vessels. This reaction is characterized by collections of fluid and mononuclear cells. There is probably also some degeneration of nerve cells. The pathologic pictures observed in the lungs, liver, spleen, heart, intestine and kidneys are similar to those reported as occurring in human beings who have died of psittacosis. The dangers that beset the fearless pioneers in the search for the causes of obscure microbiotic disorders have been evidenced by the numbers of bacteriologists who have become victims of psittacosis during the course of their investigations. One of the workers in the group just referred to succumbed to a typical attack, having been exposed in no other way than through contact with his experimental animals. Thus another member is added to the coteries of heroes of science whose fearless search of truth has led them into the realm of hidden dangers and possible death.

1. Rivers, T. M., and Berry, G. P.: Observations on Psittacosis in Mammals, Proc. Soc. Exper. Biol. & Med. 27: 802 (May) 1930.

THE FINGER NAILS IN TUBERCULOSIS

The protective tissue of mammals is characterized by the protein keratin, an albuminoid markedly resistant to chemical action and thus well adapted for its primary function. Hair, nails, hoofs, feathers and the epidermal skin layers are usually considered highly inert under ordinary environmental conditions. These superficial structures often serve, however, as indicators of disturbances within the body. Malnutrition in general and even specific food deficiencies induced in experimental animals are associated with changes in the skin, hair and feathers. A recent study by Hahn [1] on patients at the Trudeau Sanatorium points out the striking correlations between markings and form of the finger nails and active tuberculosis. Pitting of the nails was found in every one of fifty patients with active tuberculosis, in only three of fifty with inactive tuberculosis, and not in any of similar groups of ex-patients and normal controls. The pitting or depressions appeared in the visible part of the nail plate about six weeks after the onset of symptoms of the disease. There is no definite pattern, number or position of the pits, though they do appear more frequently on the nails of the index finger and of the ring finger. The toe nails do not show this uniform incidence of pitting. Once the pits have appeared, they move forward to the free edge with the rest of the nail and are removed during manicuring. Hahn also investigated the incidence of downward curving of the nails originally stated by Hippocrates to be characteristic of phthisis. The normal control group showed no incurvation and 30 per cent of the ex-patients showed it; half of those with inactive tuberculosis and 76 per cent of the patients with active tuberculosis possessed down-curving nails. Another striking feature of the finger nails in the active tuberculosis group in contrast to the other groups was the high incidence of cyanosis, the degree being roughly proportional to the severity of the symptoms. These observations emphasize the essential interdependence of body organs and systems, a fact worthy of some attention in this day of high specialization.

1. A. G. Hahn: Forty-Fifth Annual Report, Trudeau Sanatorium, 1929, p. 876.

INDICANEMIA IN RENAL INSUFFICIENCY

The determination of renal insufficiency has become important in many cases not only as a mode of diagnosis but also as a guide to the prognosis of existing disorders. The present century has witnessed the introduction of a considerable variety of tests of renal function. Some of them depend on ascertaining the rate and completeness with which easily detectable foreign substances, notably dyes, are excreted after they have been introduced parenterally into the patient. Other tests include the measurement of the concentration in the blood attained by normal constituents that ordinarily are eliminated through the kidneys. This is essentially an estimation of the accumulation of waste products, including either the total nonprotein nitrogen or such specific components as urea, creatinine or uric acid. The choice of method depends in part on the severity of the disease. Some of the procedures call for considerable chemical skill and usually require the services of a trained analyst. Monias and Shapiro [1] of Chicago have reported a comparatively simple procedure that involves the determination of the indican content of the blood serum or plasma. The existence of an indicanemia in uremic conditions was described twenty years ago by Obermeyer and Popper. According to the latest students of the subject, the determination of indican in the blood is a sensitive and specific test of absolute renal insufficiency that is reliable in diagnosis and in prognosis. The proposed technic is stated to be adapted to enable the practitioner to make the determination of blood indican in his own office with adequate accuracy and with a minimum of time and effort. If the results reported by Monias and Shapiro become adequately substantiated by further experience, their contribution may prove to be a valuable service to present day diagnostic undertakings.

Association News

MEDICAL BROADCAST FOR THE WEEK

American Medical Association Health Talks

The American Medical Association broadcasts at 10 o'clock, daylight saving time, on Monday, Tuesday, Thursday and Saturday, over Station WBBM (770 kilocycles, or 389.4 meters).

The program for the week of July 21-26 is as follows:

July 21. Sleeping Sickness.
July 22. Reducing is All the Rage.
July 24. Hazards in the Home.
July 26. The Two and One-Half Million with Heart Disease.

Five Minute Health Talks may be heard over the Columbia Broadcasting System daily from 1 to 1:05, daylight saving time.

The program for the week is as follows:

July 21. Those Vibrating Vocal Cords.
July 22. Health Hints for Hot Days.
July 23. A Hoosier Crusader.
July 24. Be True to Your Teeth or They Will be False.
July 25. The Reaction of the Red Blood Cells to Disease.
July 26. Carbuncles.

1. Monias, B. L., and Shapiro, P.: The Value of the Indican Determination in the Blood in Cases of Renal Insufficiency, Arch. Int. Med. 45: 573 (April) 1930.

ABSTRACT OF MINUTES OF MEETINGS OF BOARD OF TRUSTEES HELD IN DETROIT, JUNE 22-27, 1930

The Board of Trustees met in Detroit each day during the annual session of the Association.

PUBLIC HEALTH CONFERENCE

Plans for a fourth public health conference were discussed, with a view to arranging for such a conference in the fall.

FEDERAL NARCOTIC LEGISLATION

Drs. J. H. J. Upham, S. Dana Hubbard, J. R. Neal, Torald Sollmann and Robert L. Anderson were appointed a committee on Federal Narcotic Legislation to confer with a committee of the House Committee on Foreign Affairs to consider federal narcotic legislation.

SCIENTIFIC EXHIBITS

The employment of Dr. Thomas G. Hull to take over the exhibit work of the Association was approved.

COMMITTEE ON FOODS

The Board approved the employment of Raymon Hertwig as secretary of the Committee on Foods.

It also accepted the resignation of Dr. H. C. Sherman from the committee, with an expression of appreciation for the service rendered by him while a member of it.

ELECTION OF DR. RALPH FENTON TO EDITORIAL BOARD OF ARCHIVES OF OTOLARYNGOLOGY

Dr. Ralph Fenton of Portland, Ore., was elected to membership on the Editorial Board of the *Archives of Otolaryngology*, to succeed Dr. Eugene A. Crockett, whose term expired last February and who did not desire to be reappointed.

REPRESENTATIVE TO MEMORIAL SERVICES OF POLISH MEDICAL AND DENTAL ASSOCIATION

Dr. Allen H. Bunce was appointed to represent the Association at memorial exercises for Dr. Paul Fitzsimmons Eve, to be held under the auspices of the Polish Medical and Dental Association in Augusta, Ga., in November, 1930.

RESOLUTIONS CONCERNING LEGISLATIVE AND OTHER MATTERS

Various resolutions were considered by the Board and reported to the House of Delegates. These will be found in the minutes of the House of Delegates.

COMMITTEE ON MILITARY AFFAIRS AND NATIONAL DEFENSE

A report of the Committee on Military Affairs and National Defense was received and referred to the House of Delegates.

FRACTURE EXHIBITS BY STATE SOCIETIES

In accordance with a request from the Cooperative Committee on Fractures, the Board of Trustees agreed to suggest to the various state societies that are in a position to have scientific exhibits that they arrange, when possible, in connection with their meetings, fracture exhibits similar to those shown at annual meetings of the American Medical Association, and to furnish charts and fracture folders to such societies at cost.

ERECTION OF BUILDING FOR STORAGE PURPOSES

The erection of a temporary brick building, 40 by 60 feet, on the lots in the rear of the houses adjoining the headquarters building in Chicago, to be used for storage purposes, was approved.

NOSTRUMS AND QUACKERY IN PUBLIC LIBRARIES

It was decided to place Nostrums and Quackery in certain public libraries.

NOMINATION OF DR. AUSTIN A. HAYDEN AS TREASURER

The board nominated Dr. Austin A. Hayden, the present incumbent, for reelection as Treasurer of the Association.

SEPTEMBER MEETING OF BOARD OF TRUSTEES

The next meeting of the Board of Trustees was set for Thursday and Friday, September 25 and 26.

Other matters of a routine nature were considered.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

CALIFORNIA

Outbreak of Infantile Paralysis.—Special steps are being taken by health authorities to prevent the further spread of epidemic poliomyelitis, which has caused eleven deaths in Los Angeles County since June 1. The number of cases reported in the state in May was fifty-eight, and the first two weeks of June, sixty-nine. The total since January 1 has been 175.

CONNECTICUT

Reinstatement of Physicians.—The department of health announces the full reinstatement of the following physicians whose licenses to practice medicine and surgery were previously revoked during the diploma mill investigation of 1923 and 1924:

Babtkis, David S., Bridgeport, Middlesex College of Medicine and Surgery.
Bush, James W., New Britain, Kansas City College of Medicine and Surgery.
Goodwin, Allie J., Kensington, Kansas City College of Medicine and Surgery.
Karp, Julius P., Hartford, Kansas City College of Medicine and Surgery.
Lilienthal, Samuel, Denver, Colo., St. Louis College of Physicians and Surgeons.
Long, Ralph F., Terryville, Kansas City College of Medicine and Surgery.
Slabotsky, Samuel, Central Village, Kansas City College of Medicine and Surgery.
Tetrault, Philias E., Putnam, Middlesex College of Medicine and Surgery.
Turcotte, Samuel J., Willimantic, Middlesex College of Medicine and Surgery.

GEORGIA

Personal.—Dr. Clarence L. Ayers, Toccoa, was guest of honor recently at the annual banquet of the Stephens County Medical Society. Dr. Ayers has held the office of secretary-treasurer for many years.—The State Medical Association of Georgia has commissioned John Pitts Corry, instructor in history, Emory University, Atlanta, to prepare a history of the association.

Society News.—The Chattahoochee Valley Medical and Surgical Association held its thirteenth annual meeting, July 7-9, at Radium Springs, near Albany. Among others, addresses were given by Drs. Gilbert F. Douglas, Birmingham, Ala., on injection of the uterus and tubes with iodized oil; William A. S. Geddes, "Acidosis and Its Relation to Other Diseases" and Andrew L. Glaze, Jr., "Rational Treatment of Pyogenic Skin Disorders." A large number of visitors from Alabama were present.——Dr. Thomas H. D. Griffitts, U. S. Public Health Service, recently addressed the Randolph County Medical Society on malaria. Talking pictures were used in connection with the program.

ILLINOIS

Society News.—Drs. Clark E. Baker, Marion, spoke on "The Chemistry of Metabolism," and William G. Parker, Mount Vernon, "Some Aspects of Allergy," before the Franklin County Medical Society, June 25.——Circuit Judge Charles E. Briggie, Springfield, declined, June 27, to intervene in the decision of the state department of registration and education and the department's medical committee which had refused to grant recognition to the Illinois College of Physicians and Surgeons, Chicago.

County Society Honors Dr. Camp.—The Hancock County Medical Society held its July 7 meeting in honor of Dr. Julian E. Camp, Augusta, who recently finished his fiftieth year of continuous practice. Dr. Camp talked on "Medical Practice in 1880." Drs. Andy Hall, director, department of public health, spoke on "Relation Between the Health Department and the Practicing Physician"; William D. Chapman, Silvis, "Then and Now," and Everett P. Coleman, Canton, on "Treatment of Eclampsia."

Chicago

Personal.—Dr. Jerome R. Head has been appointed associate in surgery at Northwestern University Medical School. Dr. Head has been a member of the surgical staff of the University of Illinois and was formerly connected with the Wisconsin General Hospital.

A Million for Buildings at University of Chicago.—The General Education Board has appropriated to the University of Chicago $1,000,000 toward $2,000,000 needed for the construction, equipment, endowment and upkeep of two buildings, one for the department of hygiene and bacteriology and one for the department of anatomy.

INDIANA

County Society Forms Credit Association.—The Franklin group of the Johnson County Medical Society recently formed the Physicians' Credit Association. This originated in the report that certain persons take unfair advantage of doctors in nonpayment of bills which, though small, represent by their number a profit. The plan of the association is to inform members of the association of the names of persons owing accounts, the list to be sent each doctor at regular periods. Before the names of patients are placed on the bad accounts list, a series of letters will be mailed them.

Personal.—Dr. Lucien Allen Stamper was awarded the Ravdin Medal at Indiana University School of Medicine, recently. The medal is presented by Dr. Marcus Ravdin, Evansville, to the senior in the medical school attaining the highest average during the four years.——Dr. Hugh M. Mullikin has resigned as medical officer in charge of the U. S. Public Health Clinic for the treatment of venereal diseases, state department of health, and has been succeeded by Dr. Frank L. Wedel. Dr. Verne K. Harvey, Indianapolis, has been appointed state epidemiologist in the state department of health to succeed Dr. Walter W. Lee who resigned some time ago to accept a similar position in Connecticut.

MAINE

Society News.—Drs. Charles B. Sylvester and Philip W. Davis, Portland, president and secretary, respectively, of the Maine Medical Association, were official representatives at the recent golden jubilee of the New Brunswick Medical Society; at this meeting Dr. Edwin W. Gehring, Portland, read a paper on "Syphilis and What Is Society's Attitude Towards It?"——The Androscoggin County Medical Society was addressed recently by Dr. Timothy Leary, Boston, on brain pathology.——At the Aroostook County Medical Society meeting held recently, Dr. Theodore S. Moise, Jr., Bangor, presented a paper on "Treatment of Gastric Duodenal Ulcers"; Dr. Langdon T. Thaxter, Portland, "Tuberculosis as Revealed by Radiograms," and Dr. Edwin W. Gehring, Portland, a paper on John Hunter entitled "A Great Scotsman and His Brother."——A clinical conference on the heart was held by Dr. Eugene H. Drake and a similar conference on diabetes and nephritis by Dr. Elton R. Blaisdell at the Maine General Hospital, Portland, June 2. In the evening, the Cumberland County Medical Society was addressed by Drs. James A. Spalding, Portland, and Nelson H. Lowry, Chicago, on "Some Curious End Results" and "Electro-Coagulation in Surgery," respectively.——At the annual meeting of the Oxford County Medical Society recently, Dr. Richard B. Cattell, Boston, spoke on "Treatment of Varicose Veins and Ulcers."

MARYLAND

Spread of Typhus Fever.—According to a recent report, typhus fever is apparently more prevalent than is generally recognized. Recently a case was discovered in Baltimore County and one in the city of Baltimore. There is now a total of eleven cases reported in county areas compared with seven cases previously noted (THE JOURNAL, July 5, p. 53). The most recently reported case was mild but unmistakable.

MICHIGAN

Illegal Practitioner Fined.—Laverne Rowoldt, Clarenceville, was recently fined $100 for practicing medicine without a license. Rowoldt is said to have conducted the "Clarenceville Clinic."

Society News.—Dr. Frederick J. Cady, Saginaw, was elected president of the Saginaw Valley Academy of Ophthalmology and Otolaryngology, organized June 6; Dr. Paul R. Urmston, Bay City, vice president, and Dr. Walter K. Slack, Saginaw, secretary-treasurer. The opening address was given by Dr. Charles H. Baker, Bay City, on deafness.

NEW YORK

New York City

Free Outdoor Movies and Disease Prevention.—The New York Tuberculosis and Health Association is cooperating with the city departments of health and hospitals in a series of free outdoor motion pictures. These movies, which began

July 1, will extend to August 29, and will be given in the various parks. They impart information regarding the prevention of tuberculosis and other communicable diseases.

Personal.—After a month's visit in the United States to arrange for an exchange of students between universities in Spain and the United States, Viscount de Casa Aquilar, chief surgeon to the king of Spain and professor of surgery, University of Madrid, sailed, June 28, for home.——The Roumanian government recently decorated Dr. Julius I. Klepper with the Order of the Commander of the Crown.——Dr. Samuel Wetchler has been appointed an associate in pediatrics at the New York Post-Graduate Medical School and Hospital.——The University of Michigan recently conferred the degree of doctor of science on Dr. Alfred F. Hess, clinical professor of pediatrics, University and Bellevue Hospital Medical College, in recognition of his work on the activation of foods and sterols by means of ultraviolet irradiations.——Dr. Clarence Charles Burlingame sailed, May 16, for Montevideo, Uruguay, where, it is reported, he will collaborate in the establishment of a new medical center to be patterned after the Columbia University Medical Center.

NORTH CAROLINA

Personal.—Dr. Robert C. Kesler, Spencer, has recently accepted a position in the U. S. Marine Hospital in New Orleans.——Dr. Thurman D. Kitchin, for thirteen years dean of the medical school at Wake Forest and a past president of the Medical Society of the State of North Carolina, was recently elected president of Wake Forest College.

Campaign Against Undernourishment.—The council on state problems, a lay organization approved by the medical profession, has recently placed extensive advertisements in newspapers over the state to arouse the public in the advancement of health. The effect of undernourishment was brought to the attention of the residents of North Carolina. Emphasis was placed on maladies due to poor food habits with particular reference to the eradication of pellagra.

OREGON

First Conference of County Secretaries.—The Oregon State Medical Society's first annual conference of secretaries of component societies was held, June 4, at Portland. Among other subjects presented were "Essentials of a Successful Local Medical Society" by Dr. William W. Baum, Salem; "Post-graduate Work in a Local Medical Society" Dr. Frederick D. Stricker, Portland, secretary of the state society, and "Publicity Methods for Local Medical Societies" by Dr. Goodrich C. Schauffler, Portland.

Society News.—At the Portland City and County Medical Society meeting, May 21, Dr. Blair Holcomb talked on "The Surgical Diabetic," and Dr. Matthew C. Riddle, "Treatment of Pernicious Anemia." May 27, a special meeting was held in conjunction with the Portland District Dental Society at which Louis Sherman Davis, Ph.D., Indiana University School of Dentistry, spoke on "Nutrition of Bone and Dentin." The initial yearly lecture, sponsored by Alpha Omega Alpha, was given at the University of Oregon Medical School, May 19; the essayist was Dr. Ralph C. Matson, Portland, who presented the subject "Surgery of the Chest in Pulmonary Tuberculosis."

PENNSYLVANIA

Society News.—Dr. Harold L. Foss, Danville, addressed the west section of the Fifth Councilor District Medical Society, July 17, on "Surgical Treatment of Hypertrophy of the Prostate Gland."——A symposium was presented on the importance and requirements of a hospital for contagious diseases in the community before the Lycoming County Medical Society, July 11; the discussants were Drs. Samuel S. Woody, Philadelphia, and John Moore Campbell, Harrisburg, of the state department of health.——The Fayette County Medical Society was addressed, June 5, by Drs. Alexander M. Duff, Jr., Republic, and Ralph P. Beatty, Uniontown, on "Injection Treatment of Varicose Veins" and "Urinary Retention: Causes and Management," respectively.

Philadelphia

Fund for Pasteur Portrait Completed.—Dr. Charles Harrod Vinton, the oldest life member of the Philadelphia County Medical Society, recently made a contribution sufficient to bring to completion the presentation of the Pasteur portrait to the society. It was recently proposed by Dr. William Duffield Robinson that an oil portrait of Louis Pasteur be painted and given to the society. The cost was to come from the proceeds of small portraits of the great scientist. The raising of this fund was incomplete until Dr. Vinton made his gift.

SOUTH CAROLINA

Changes in Faculty at Medical School.—The Medical College of the State of South Carolina announces the following changes in faculty, among others, for 1930 and 1931:

Dr. Olin B. Chamberlain, assistant professor of medicine.
Dr. Robert B. Gantt, assistant professor of urology.
Dr. Josiah E. Smith, assistant professor of rhinology and otolaryngology.
Dr. Francis W. Porro, lecturer in pharmacology.
Dr. Pierre G. Jenkins, lecturer in ophthalmology.
Dr. Powell M. Temples, lecturer in clinical pathology.
Dr. Eugene C. Hood, lecturer in bacteriology.
Dr. Thomas H. Byrnes, instructor in pathology.
Dr. Paul W. Sanders, instructor in urology.
Dr. John M. van de Erve, instructor in physiology.
Dr. Robert B. Rhett, instructor in ophthalmology.
Dr. Robert M. Hope, instructor in rhinology and otolaryngology.
Dr. James D. Whaley, assistant in urology.
Dr. John Sughrue, assistant in obstetrics.
Dr. William H. S. Speissegger, assistant in medicine.
Dr. Isaac R. Wilson, Jr., assistant in surgery.
Dr. James P. Palmer, assistant in roentgenology.
Dr. George H. Zerbst, assistant in rhinology and laryngology.
G. G. Durst, assistant in chemistry to fill the position made vacant temporarily by the leave of absence granted by Frederick W. Kinard.
Dr. Charles W. Kollock was appointed professor emeritus of rhinology and laryngology, following his resignation.

TENNESSEE

Physical Examination Required of Medical Students.—According to Orren W. Hyman, Ph.D., administrative officer, the University of Tennessee College of Medicine inaugurated, July 11, the requirement that each student admitted be subject to a physical examination annually. Admission is denied to those having defects until such disability is removed. In the annual reexaminations, students will be required to withdraw if their physical condition is unsatisfactory but allowed to reenter on the removal of the disability.

Society News.—At the Gibson County Medical Society meeting, June 30, papers were presented by Drs. Joseph A. Crisler, Jr., Memphis, and William C. McRee, Trenton, on "The Acute Abdomen" and "Empyema of the Chest," respectively.——Papers on "Management of High Blood Pressure," "Intravenous Pyelography" and "Prostatic Obstruction" were given by Drs. Eroll S. Hopper, Alamo, Charles L. Denton, Dyersburg, and Isaac G. Duncan, Memphis, respectively, before the Tri-County Medical Society, July 2.

Appointments on Medical Faculty of Vanderbilt University.—The following changes on the faculty of Vanderbilt University School of Medicine are announced:

RESIGNATIONS

Francis H. Swett, Ph.D., to become professor of anatomy in Duke University.
Dr. Duncan C. Hetherington to become assistant professor of anatomy in the Medical School of Duke University.

APPOINTMENTS

Karl E. Mason, Ph.D., associate professor of anatomy.
Dr. Sam L. Clark, assistant professor of anatomy.
Dr. Frank H. Luton, assistant professor of psychiatry, effective January 1.
Dr. Harry Hillstrom, assistant professor of surgery in charge of roentgenology, succeeding Dr. Christopher C. McClure, resigned.
Richard Ashman, Ph.D., assistant professor of physiology.
Ann S. Minot, Ph.D., assistant professor of pediatric research.
Dr. John B. Youmans, associate professor of medicine, was appointed also director of graduate instruction.

PROMOTIONS

Dr. Alfred Blalock, associate professor of surgery.
Dr. George S. Johnson, assistant professor of surgery.
Dr. Alvin E. Keller, assistant professor of preventive medicine and public health.
Howard W. Robinson, Ph.D., assistant professor of biochemistry.
Dr. C. Eugene Woodruff, assistant professor of pathology.

WASHINGTON

Personal.—Dr. Edward C. Ruge, Seattle, has been appointed superintendent of the Northern State Hospital for the Insane at Sedro-Woolley, succeeding Dr. James W. Doughty.——Dr. Robert L. McArthur, formerly of Seattle, has returned from a three years' residence at the famous leper colony in Hawaii.

Society News.—The general meeting of the King County Medical Society, June 2, was addressed by Drs. Julius A. Weber on "Pulmonary Atelectasis"; Charles R. Castlen, Seattle, "Spontaneous Pneumothorax," and William Snow Miller, Madison, Wis., "Some of the Anatomical Relations of Tuberculosis."——Thirty-five members of the Seattle Academy of Surgery were entertained, June 21, by Dr. John P. Schutt at his summer home on Marine Drive in Bremerton.——Under the auspices of the Seattle Surgical Society, Dr. Lorenz Boehler, Vienna, talked on fractures, July 9.

CANADA

Society News.—The New Brunswick extramural lectures for April were given by Dr. Victor D. Davidson on the treatment of fractures of the spine, and Dr. Ralph A. Hughes, St. John, N. B., sinus disease. These lectures were given at St. Stephen, Fredericton, Moncton and Saint John.——The provincial department of health has instructed Dr. Charles W. MacMillan, Fredericton, of the tuberculosis branch, to make a canvass of St. John and vicinity along tuberculosis lines from a public health standpoint.

British and Canadian Medical Associations Meeting.—The annual meeting of the Canadian Medical Association will be held in Winnipeg, August 22-23. The annual session of the British Medical Association will also be held in Winnipeg, August 25-29. The tentative program for the latter meeting includes addresses by Sir E. Farquhar Buzzard, London, on "Work, Rest and Play in Health and Disease"; Sir Lenthal Cheatle, "The Primary Tumor in Carcinoma of the Breast"; Sir William I. DeCourcy Wheeler, "The Significance of Surgical Recoil Following Visceral Decompression," and Lord Moynihan will deliver the Listerian oration. A number of unique entertainment features are being planned, among which will be a pageant at Assiniboine Park, ice hockey and fancy skating carnival, reception and dance at the Royal Alexandra Hotel, and specially conducted tours for the ladies. The annual meetings of the Alberta, Saskatchewan and Manitoba medical associations will be held, August 25.

GENERAL

Fellowships in Psychiatry and Psychology.——Dr. Lawson G. Lowrey, director, Institute for Child Guidance, New York, announces that the fellowships in psychiatry and psychology for 1930 (THE JOURNAL, June 28, p. 2077) have been granted. The next group will be available in 1931.

Fifty Dollars for Your Biography in Print.—Physicians are warned by better business bureaus over the country to be watchful concerning agents for biographic books. A number of salesmen have obtained personal facts from prominent persons asking them to sign to show that the information was correct. Later, threat of legal suits is made to collect bills of $40 or $50 to pay for the order of a book.

Propose Monument to Roentgen. — Prof. Paul Krause, Münster, president of the Rheinisch-Westfalische-Röntgen Society, has announced the proposal of erecting a monument to Roentgen in the birthplace of Lennep. The plan is to raise one fourth of the cost of the monument or $2,500 from American roentgenologists. So far $900 has been raised and it is hoped that the remaining $1,600 will be contributed by 1,200 roentgenologists who have not yet responded. Contributions are to be sent to Otto Glasser, Ph.D., 2050 East Ninety-Third Street, Cleveland.

Regulations Concerning Ethyl Gasoline.—The surgeon general, U. S. Public Health Service, has proposed to the various state health authorities regulations relative to the distribution of ethyl gasoline. Each pump that delivers motor fuel containing tetra-ethyl lead would have displayed in prominent heavy gothic capital letters:

CONTAINS
LEAD
(TETRA-ETHYL) AND
IS TO BE USED AS
MOTOR FUEL ONLY.
NOT FOR CLEANING
OR ANY OTHER USE.
AVOID SPILLING.

American Roentgen Ray Society. — At the thirty-first annual meeting of the American Roentgen Ray Society, West Baden, Ind., September 23-26, addresses will be given by Drs. Donald C. Balfour, Rochester, Minn., on "Relationship Between the Roentgenologist and Surgeon in Treatment of Diseases of the Stomach and Duodenum"; William F. Braasch, Rochester, Minn., "Intravenous Urography"; Ray A. Carter, Los Angeles, "Coccidioidal Granuloma: Roentgen Diagnosis"; Otto Glasser, Ph.D., Cleveland, "Wilhelm Conrad Roentgen and the Discovery of the Roentgen Rays," and Raphael Isaacs, Ann Arbor, "Blood Changes in the Lymphomata and the Leukemias and Their Bearing on Roentgen-Ray Therapy."

National Formulary Revision Committee.—At the first meeting of the National Formulary Sixth Revision Committee, June 30-July 1, Cleveland, the committee organized into subcommittees on pharmacognosy, chemicals, solution preparations, extractive preparations, solid preparations for internal use, external preparations, miscellaneous preparations, posology and biologic items, and nomenclature and tables. Auxiliary committees were authorized on dental and veterinary preparations and the American Dental and American Veterinary associations, respectively, were invited to appoint members to cooperate. All admissions and deletions were acted on by the committee as a whole. Changes in the policy on scope are to be presented in the bulletin of the committee in a final decision reached by mail. Twenty thousand retail druggists were reached to obtain data on the use of the National Formulary galenicals.

PHILIPPINE ISLANDS

Cholera Increases in the Philippines.—Despite efforts of health authorities to check cholera, the disease has entered several previously unaffected places, and the number of deaths, according to the Chicago *Tribune*, since June 20 was estimated at 221. The number of cases in the islands from June 20 to July 1, it is reported, was 436. Manila was still free from the disease at the time of this report.

CORRECTIONS

Bronchomycosis.—In the article by Stokes, Kiser and Smith (THE JOURNAL, July 5, p. 14) the roentgenograms as printed were transposed, the description of figure 1 applying to the illustration appearing as figure 2, and vice versa.

Seventh Annual Report of Diphtheria Mortality in the Large Cities of the United States.—In this report (THE JOURNAL, June 7), Camden, N. J., was included in the list of "Ten Cities with the Highest Diphtheria Death Rates for 1929" (table 11). This city, with an actual rate of 11.6, should not have been included in this table. Instead, Youngstown, Ohio, with a rate of 12.7, should appear in this list.

Government Services

Army Personals

Major Ziba L. Henry will sail from Brooklyn for San Francisco about September 27, and on arrival will proceed to Fort McDowell, California, for duty.——Capt. Robert A. Dickson will sail from New York about October 10 for San Francisco; on arrival he will report for duty at Letterman General Hospital.——Major Clarke Blance will sail from San Francisco for New York about August 30; on arrival he will report for duty at Fort Hamilton.

Changes in Veterans' Bureau Personnel

The June U. S. Veterans' Bureau Medical Bulletin notes the following recent changes in personnel:

HOSPITALS

Dr. Mariano R. Aguirre, appointed at Jefferson Barracks, Mo.
Dr. Daniel J. Boland, reinstated at Rutland Heights, Mass.
Dr. Raymond O. Cheney, appointed at Lake City, Fla.
Dr. Edwin R. Curran, appointed at Bronx, N. Y.
Dr. Charles A. Elliott, appointed at Hines, Ill., diagnostic center (part time).
Dr. Everett R. Deweese, appointed at Kansas City, Mo. (part time).
Dr. David C. Farnsworth, transferred to San Fernando, Calif.
Dr. Edward L. Foote, appointed at Bronx, N. Y.
Dr. Francis R. Hagner, appointed at Washington, D. C., diagnostic center (part time).
Dr. William W. Hardman, appointed at Jefferson Barracks, Mo.
Dr. Hubert T. Ivey, appointed at Castle Point, N. Y.
Dr. Samuel H. James, transferred to Tucson, Ariz.
Dr. Carl J. Johannesson, reappointed at Walla Walla, Wash. (part time).
Dr. Joseph R. Jordan, appointed at Washington, D. C.
Dr. Joseph E. T. Kennedy, reinstated at Perry Point, Md.
Dr. Ralph A. Law, appointed at North Little Rock, Ark. (part time).
Dr. Edwin M. Levy, appointed at Knoxville, Iowa.
Dr. John W. Meachen, status changed from fee to part time at Bedford, Mass.
Dr. Neal Morris, appointed at Lake City, Fla.
Dr. Asa L. Myers, appointed at Chillicothe, Ohio.
Dr. Oscar L. Nelson, appointed at St. Cloud, Minn.
Dr. Johnnie A. Norris, Jr., appointed at Gulfport, Miss.
Dr. Landrum J. Page, appointed at Walla Walla, Wash.
Dr. Archie E. Ray, resigned at North Little Rock, Ark.
Dr. Thomas Hugh Scott, appointed manager, U. S. Veterans' Bureau, Hines, Ill.
Dr. Thaddeus S. Troy, detailed from Washington, D. C., hospital to central office.
Dr. Isaac R. Wagner, transferred to Fort Lyon, Colo.
Dr. Joseph F. Wallace, transferred to central office, Washington, D. C.
Dr. Joshua P. Wood, transferred to Tucson, Ariz.
Dr. Clarence L. Whitmire, transferred to Knoxville, Iowa.

REGIONAL OFFICES

Dr. Duncan D. Bullock, appointed to central office.
Dr. Earl R. Bush, resigned at Cincinnati, Ohio.
Dr. Addison M. Dorr, appointed at Milwaukee (part time).
Dr. John E. Habbe, resigned at Milwaukee.
Dr. Allan McLellan, appointed at Casper, Wyo. (part time).
Dr. Herman A. Tyler, appointed to central office.

Foreign Letters

LONDON LETTER

(From Our Regular Correspondent)

June 21, 1930.

Revision of the British Pharmacopeia

The pharmacopeia committee of the general medical council has completed its task of considering additions to the British pharmacopeia. The committee has decided that it should contain only those standard articles which are in general use throughout the empire. Where it is desired that official use shall be given in any part of the empire to any local drugs or local substitutes, the committee suggests that this should be left to the governments concerned, which by means of supplements or addenda can meet any local requirement or introduce any modification or alternative desired. In the case of groups of substances containing the same or similar active principle, e. g., vegetable substances containing tannic acid, the number of drugs described has been reduced. Certain substances of little use or of doubtful value have been omitted. Preparations such as hypodermic injections and certain of the "liquors" have been omitted on the ground that standard formulas are not necessary and that it is preferable that potent drugs should be prescribed by the physician in quantities by weight as required. Special formulas for suppositories have been omitted and a general method will be described, leaving to the discretion of the physician the dosage of the medicament to be incorporated. Formulas for several mixtures and for some of the compound pills have been omitted. It has thus been possible to reduce the number of substances described and to make room for more precise tests of purity and for biologic tests and other new information. Progress has been made with the question of vitamin tests and an investigation into a standard color test for cod liver oil. A survey of the nomenclature has been made with a view to bringing it into line as far as possible with the international agreement and the United States Pharmacopeia.

The Imperial Entomologic Conference

Delegates from twenty-two countries are attending the imperial entomologic conference. A visit of great interest was paid to the Farnham royal parasite laboratory, which was founded by the imperial bureau of entomology in 1927 to further the control of insect pests by the biologic method. The "parasite zoo," as the laboratory has been called, is a clearing station and breeding center for "beneficial" insects. These are dispatched to the dominions and colonies to attack pests that cause enormous loss of plant and animal life. The beneficial insects are parasites and control the noxious insects by laying their eggs in or on the pest's grubs or eggs and then feeding on them. In the three years of its existence the laboratory has been asked to investigate seventy different kinds of insect and weed pests in the hope that parasites might be found. It is estimated that blowflies annually destroy about 5 per cent of the sheep of Queensland and cost Australia $20,000,000 a year. The wheat stem sawfly did $12,500,000 damage in 1926 in one province alone. America suffers so severely that $10,000,000 was recently spent by the government in one year to check the advance of the European corn borer, which is now advancing into Canada. An important report, published by the government and entitled "The Biological Control of Insect and Plant Pests," contains the first full account of the work done at the Farnham laboratory. The report describes some curious devices invented by entomologists. One is called a "bouncing machine." Insect eggs are made to roll down a wooden chute and bounce off a small piece of tin at the bottom. An egg which has been parasitized—that is, has had another egg laid by a parasite inside it—has not the same capacity for bouncing as have healthy eggs, which jump into a farther tin and so are separated for laboratory purposes. Shipments of twenty different kinds of insects have been sent overseas, generally in cold storage, in special cases with food such as raisins or sugar and water for rations. Fourteen consignments of a parasite which attacks woolly aphis—a serious apple tree pest—have been distributed in England, India and Kenya Colony. This parasite has already practically exterminated the woolly aphis in New Zealand. Parasites of the wheat stem sawfly, the whitefly and the pine shoot moth have gone to Canada. One that attacks the sheep blowfly has been sent to Australia and to South Africa. A Californian ladybird has been sent to Madras. A miniature wasp which eats the pear slug has gone to New Zealand and a bollworm to the Barabados. In all, about fifty-eight shipments, comprising a hundred thousand specimens, have been shipped from the laboratory to various parts of the empire.

A Color Problem in England

There is no color line in England such as exists in America. This does not mean that the English do not appreciate differences of race. They are keen on such differences, even between European races, and often contrast the Latin races with themselves. They are by no means without race prejudices but at the same time they have a strong tendency to take a man for what he is, regardless of race or of color. His color may arouse prejudice but this may be overcome when he is known. This absence of a color line has given rise to a color problem. The great seaport of Liverpool is frequented by seamen of many races, including Chinese and many Negroes from West Africa. The cohabitation of these races with the women of the city has given rise to a half-caste population. The number of Anglo-Negroid families is about 450 and the children born of this union amount to about 1,350. On the other hand, the Anglo-Chinese children do not provide any particular problem. The Anglo-Chinese child is declared to be mentally equal if not superior to the white, and since coloring and features are far less distinctive than those of the Anglo-Negroids they are not such a handicap. Further, the family life appears to be stable, the man remaining faithful to one woman though not married to her. The Anglo-Negroid family is far different. A Liverpool association for the welfare of half-caste children has been formed. The chairman, Prof. P. M. Roxby, says that the conditions under which colored seamen from West Africa enter Liverpool are a social menace and detrimental to the best interests of blacks and whites alike. Miss Muriel E. Fletcher has for nearly two years been occupied with an inquiry for the association into the condition of half-caste children in Liverpool, where they are more numerous than in any other port. Of the Anglo-Negroid unions she says there is little harmony between the parents; the colored man generally despises the woman with whom he consorts, while the majority of the women have little affection for the men. They regret their union but stay for the sake of the children. The mothers are generally good to the children while they are small but later resent the fact that the children cannot get work and grudge having to keep them. The children find their lives full of conflict, and all the circumstances give undue prominence to sex. These families have a low standard of life morally and economically, and there appears to be little future for the children. They attend school in the poor districts and do not show any inferiority of health or proneness to infections compared with white children. The balance of evidence is that their intelligence is below the average. Their relations with the white children are friendly but they begin to feel outcast when they leave school and this feeling develops rapidly. There is no evidence that they have any special delinquent tendencies, but all their circumstances give undue prominence to sex. Owing to their unemployment, fondness of dress and finery, and the persistence of men, it is practically impossible for them to remain chaste, even if they desire to do

so. As employers are unwilling to engage colored labor, the association has tried training schemes for colored girls but with limited success. It is thought that a larger and more intensive scheme might have greater success. It has been suggested that the obvious solution of the difficulty is to replace colored firemen by white on all British ships coming to this country, but the shipowners say that white men could not work in the heat of the stokeholds on the West Coast of Africa. However, the National Union of Seamen denies this. Other suggestions are the signing on of men in Africa so that they would be obliged to take the round trip and receive no pay in this country, and greater discrimination in the issue of British passports.

Expert Translators

The eminent physicist Sir J. J. Thomson, president of the Association of Special Libraries and Information Bureaux, has drawn attention to the formation by the association of a panel of expert translators. Those who require the services of a translator often experience difficulty in finding one who has both a knowledge of the language and of the special subject concerned, and the difficulty increases when the language is uncommon and the subject highly technical. Proficiency in the language is not enough. To afford specialized service the translator must have not only a good knowledge of the language but a close acquaintance with the subject he has to translate—law, metallurgy, medicine, architecture or whatever the subject may be. With the object of overcoming this difficulty, which has been brought to notice continually, the council of the association recently appointed a committee of experts to prepare a scheme for establishing a panel of translators having both linguistic and technical qualifications, the part taken by the association being to act as a connecting link between the translator and the user. Names of approved persons are now being registered under the scheme adopted, and those who are interested in either capacity are invited to write for particulars to the Secretary, Association of Special Libraries and Information Bureaux, 26 Bedford Square, London, W. C. 1.

Medical Treatment of Europeans in India

That great achievement, both in its impartiality and its thoroughness, the report of the Simon Commission, regards as essential the continued provision of medical treatment by European physicians for the European officers of the Indian civil and military services. The commission recommends that no change be made in the rule which gives the secretary of state in council the power to prescribe the number of Indian medical service officers to be employed in the provinces and the appointments and conditions on which they shall be employed.

Medical Patents

It is a tradition of the medical profession in this country that any discovery or invention concerning the treatment of disease should be freely and at once placed at the service of the whole profession, and not be kept secret or patented by the discoverer. This practice has now been questioned in a letter to the *Times* by a chemist, Dr. F. A. Mason, of the Dyestuffs Laboratory, College of Technology, Manchester. He points out that all over the world research work is in progress on the production of synthetic organic substances, often of highly complex structure and demanding the highest chemical skill. Some products have been discovered by individual chemists working in conjunction with a pathologist; in other cases they have been the result of the team work of many chemists. Nearly all patentees are German or Swiss firms who by patent protection are able to develop their discoveries and bring them before the medical profession and thus cover the heavy expenditure involved. The synthetic local anesthetics show the debt of humanity to the organic chemists. Dr. Mason asks, Is it seriously suggested that it is unethical for a chemist or physician to receive any reward if he is fortunate enough after months or years of work to discover a new remedy? He must pay out of his own pocket for all unsuccessful research, and when after long and arduous work he attains a success is he to reap nothing? Such a practice Dr. Mason contends is fundamentally unjust and contrary to the public interest, as instead of encouraging firms and individuals to carry on research in chemotherapy it discourages them.

The Alcohol Problem

The licensing (of saloons) commission has been sitting for eight months. At the fiftieth session Mr. Bailey, political and literary secretary of the United Kingdom Alliance (a temperance organization), expressed himself in favor of prohibition but did not think that there was a majority in this country for that view. Dr. Alfred Salter, M.P., said that the borough he represented was the poorest in London. It had neither a cab rank nor a bookshop. In his experience, the poorer the borough the worse the social environment and the greater the expenditure on alcohol. The amount spent on alcoholic drink in Bermondsey exceeded the amount spent on bread, milk, rent and taxes put together. Nearly five times as much beer as milk was drunk. In 1924-1925 the expenditure represented $56 a head, compared with $36 for the whole of Great Britain. But notwithstanding the appalling consumption of drink there was not the same amount of gross intoxication that was prevalent in the district twenty years ago. Young persons were not going into saloons as much as their forebears. The modern young man preferred to spend his money on a motor bicycle. However, another witness from Bristol gave evidence that drinking was on the increase among women. He especially referred to the factory girls who, being unable to imitate the society cocktail devotee, were taking to cheap port.

The Safety of Air Liners: A New Parachute

For some time the question has been discussed whether civil aircraft can be provided with parachutes much as steamers are with life belts. So far all parachutes used by airmen have been attached to the wearer on entering the machine and air travel would not be made more popular if each passenger were fitted into a harness and had a bulky parachute on his back or under him as a cushion. The Irving Air Chute of Great Britain, which supplies the parachutes used in the royal air force, has devised a new parachute called a quick connecter, which is claimed to overcome these difficulties. It is for passenger aircraft, and the pack, or parachute proper, is a complete unit separated from the harness, so that it can be discarded during the flight and hung, as a life belt in a ship, in a convenient position in the cabin or cockpit. In an emergency it is taken down and hooked in a second or two to the harness, which is already on the passenger, by quick catches at two points, thus leaving the passenger ready to jump. However, the difficulty remains of jumping from the cabin of a modern air liner with only one door and two emergency exits in the roof, when there are ten or more passengers with no experience in jumping.

An Ultraviolet Ray Garden

At Cumberland Lodge, Windsor Great Park, the residence of Lord Fitzalan, a garden has been made in a cellar, where flowers and fruit are grown under ultraviolet ray lamps. The king and queen visited the garden and expressed surprise at the remarkable results obtained. The cellar is fitted with two large ultraviolet ray lamps, which are suspended from the roof and can be adjusted to any height required. The floor of the cellar has been specially prepared with soil, and shelves have been placed under the lamps with flowers in boxes and trays. Flowers are brought to perfection and fruit is ripened in quite a short time. It is said that there are only three gardens of this kind in existence.

PARIS

(From Our Regular Correspondent)

June 11, 1930.

Pneumothorax as Applied to Children

Pneumothorax is being widely used in France as a preferred method of treatment of tuberculosis in the beginning stages; as a result, as high as 50 per cent of recoveries and 20 per cent of notable ameliorations have been secured. The treatment has been employed with circumspection in children. It has even been asserted that when applied to children the method is ineffective and dangerous. Dr. Armand Delille, in collaboration with J. Vibert and J. Bertrand, demonstrates in a recent work, however, that, with the aid of this method, 75 per cent of lasting recoveries can be secured in children. Delille confines his statistics to thirty cases dating back from five to seven years, subjected at the hospital to clinical, radiologic and bacteriologic control. He obtained twenty-three recoveries with increase of weight, disappearance of the radiologic shadows and resumption of normal life several years ago. Three patients had to submit to a therapeutic pneumothorax of the opposite side; four deaths were recorded. He said that, once tuberculosis becomes open, or active, in a child, it always spreads rapidly and sanatorium treatment is unable to check it, even when possible to apply it rigorously, which is difficult in young children. If one would derive all the benefits from the application of pneumothorax, the diagnosis of pulmonary tuberculosis in the child must be made as early as possible, advantage being taken of the data supplied by systematic radiography and examination of the gastric contents for bacilli, in the morning fasting.

The Diet of Young Students

As a reaction to a lecture delivered, some time ago, by Madame Moll-Weiss, the Academy of Medicine appointed a commission to study the bases of a rational diet to be recommended to the directors of schools and *lycées,* to be supplied the children and young adults boarding in those institutions. The research of Madame Moll-Weiss, who is an authority in household management and cuisine, had shown that the composition of the meals of pupils in boarding schools in France is absolutely irrational and regulated more by economic than by physiologic criteria, especially since the increase in the cost of living has rendered difficult the balancing of the budget in institutions of learning. The undue use of dried beans is well known. They are easy to keep in stock, but their too frequent use causes fermentation and flatulence. Little meat is served, and eggs and fish are scarcely known on the bill of fare. The meals of young animals are regulated in a much more rational manner, since a slight mistake in this field is expressed immediately in financial loss. The commission appointed by the academy comprising Marcel Labbé, Lapicque, Paul Legendre, Jules Renault and Lesné, recognized the justness of the criticisms of Madame Moll-Weiss, and, adopting the conclusions of the report of Mr. Lesné, the academy passed a resolution recommending that a commission on the rational alimentation of youth be created in association with the ministry of public instruction. The duties of the commission would be: (1) to make known in all institutions the criteria, which are established by physiologists and physicians, of a rational diet adapted to the conditions of children and adolescents, and (2) to emphasize the necessary conditions for the conservation, preparation and serving of foods.

The Foundation of a School of Child Training

The president of the republic, at a formal ceremony, laid the corner stone of the Institut de puériculture, to be erected in Paris at 2, Boulevard Brune, in the area left vacant by the demolition of the old fortifications surrounding the capital. The Ecole de puériculture was established in 1920, with the collaboration of the American Red Cross Society and the public authorities. Under the control of the Faculté de médecine, the school was installed provisionally in the barracks of the old Edith Cavell war hospital, rue Desnouettes. These quarters having become inadequate, in addition to being in a bad state of repair, a new building is to be erected. The government has given the site. Further funds needed, amounting to 15,000,000 francs, ($600,000), will be raised by subscription. A committee of women, including Mrs. Walter E. Edge, wife of the ambassador of the United States, has assumed the chief burden in the collection of funds. The school is distinct from the institution founded by Dr. Variot, twenty years ago, for which the funds were furnished by the city of Paris. The latter institution, which is located in the Hôpital des enfants malades, is chiefly an institution for the instruction of pupils and a consultation center for the benefit of infants. The new institution, which is under the direction of Professor Pinard and Dr. Weill Hallé, has for its purpose the training of medical specialists and graduate visiting nurses, a personnel especially equipped for the examination of infants, children and young mothers. The program of the institution is not so much to provide treatment but to preserve the child, to protect it from its first inception (prenatal care), to ward off infants' diseases, and to assure it favorable growth. The school has dispensaries for prenatal hygiene, infant hygiene, and the hygiene of the school child. In addition there are a social service of visiting nurses, a pavilion for the nursing of infants, examination rooms for otorhinoradiography, ophthalmology and dentistry, and a room for vaccinations. The school will furnish diplomas in puericulture to physicians and nurses. The new buildings will provide eighty rooms for students, research laboratories, a hospitalization service for the study of the hygiene of normal and abnormal children, a library, and a recreation hall for nurses. The ceremonies at the laying of the corner stone brought together many persons prominent in administrative and scientific circles. The duties of chairman were assumed by Mr. Marraud, minister of public instruction, who was assisted by Professor Roger, dean of the Faculté de médecine. Mrs. Edge and the first secretary of the American embassy, representing the ambassador, were in attendance; also Miss Greuner, general secretary of the American Child Health Association.

The Tour of American Physicians Through France

A group composed of eighty-five physicians from the United States and Canada is making a tour of the principal spas, or mineral springs, of France. The French Institute of the United States, together with comte Henri d'Ornano, organized the tour. Mr. Gaston Gérard, minister of the tourists' bureau, delegated Mr. Sau to serve as the conductor of the tourists, and a special train was engaged. At every spa the arrival of the foreign physicians constitutes an occasion for the delivering of lectures by the local physicians, receptions by the municipality, banquets and addresses. The tourists express themselves as delighted with their tour.

Attempt to Reintroduce the Viper as a Medicament

Ancient medicine made great use of a concoction of parts of vipers, which was used in many diseases and was described in the pharmacopeia as late as 1884, although long since completely abandoned. Professor Billard of Clermont-Ferrand took a notion recently, out of curiosity, to make a study of this product, thinking that its former widespread use could not have rested solely on credulity and imagination. The heads of vipers were placed for a month in a 95 per cent alcohol solution and then were ground up with chopped meat, and ten times their weight of physiologic sodium chloride solution was added. The product was then passed through a candle filter and put into ampules. This maceration, when injected into the peritoneum of rabbits, caused an abundant evacuation of urine, and in healthy human subjects, when injected subcutaneously, the same result was observed. The article of Mr. Billard and his assistant, Mr. Barbes, in the *Concours médical,* contained an account of a

young girl who it was feared would die of scarlet fever. As her kidneys no longer seemed to function, she was given two subcutaneous injections of the maceration, and it brought relief and the child recovered. The maceration was found to be a diuretic of great value, which is the same conclusion reached by the physicians of ancient times.

Exploration of the Brain and the Spinal Cord with the Aid of Iodized Oil

Haguenau and Gally have devoted much time to a careful study of the subject of radiographic exploration of the brain and the spinal cord with the aid of iodized oil. They recognize that craniocerebral exploration with iodized oil, while interesting from the experimental point of view, cannot be applied as yet to current practice. Such exploration has, however, considerable value in the study of compressions of the cord. One utilizes either the high route by the introduction of iodized oil into the medullary cavity above the assumed site of the lesion, or the low route by an injection below the site of the compression, and by seesawing the patient with the aid of a specially designed apparatus. A study of the movement of the injected fluid and its stoppages enables the examiner to discover much earlier and with greater certainty the site of the compression than would be possible by the clinical examination alone. The test with iodized oil should always be applied before any intervention on the spine for the removal of a tumor, in persistent pains difficult of diagnosis, especially if they are fixed and bilateral; and finally, in all paraplegias the etiology of which is not evident.

Zinc in the Metabolism of the Child

Mr. Gabriel Bertrand read a paper before the Academy of the Sciences, the conclusions of which are different from those published in America. The experiments of Bertrand show that the proportion of zinc contained in the body of mammals presents a remarkable maximum at the time of birth. This proportion diminishes gradually during the period of nursing and rises rapidly after that period is ended. The rôle of zinc in nutrition, as established by Bertrand and his collaborators, is believed to be important from the standpoint of infant feeding. A prolongation of the exclusive milk diet beyond the normal period or the substitution of a diet equally poor in zinc must be avoided because of the danger of impoverishing the young organism.

Branch of the Pasteur Institute in French Guinea

A recent report shows that the new branch of the Pasteur Institute established some time ago, at Kindia, French Guinea, is developing in an excellent manner. The branch was created after long and patient effort. Professor Calmette in 1913 decided to establish the branch but the outbreak of the war postponed the plan. Originally the idea was to create merely a station for the collection of anthropoid apes destined for shipment to France for laboratory experiments and for a close inspection of the apes before transportating them, for in the past many animals have arrived in Europe in a tuberculous state. After the war the project was taken up, and the government of French West Africa offered 35 hectares of land in a healthful region, 7 kilometers from Kindia, which is located 150 kilometers from the coast, on the railway running from Konakri to the Niger. Since that time a number of buildings have been erected. The central building comprises the laboratory and the lodgings of the director and of transient guests. There are animal quarters, cabins for the native employees, and a factory with electrically driven machinery. Eighteen hectares are under cultivation to produce food for the men and the animals. Apes of all kinds are captured and given quarters at Kindia, some for experimentation on the ground, and others for transport in sound condition to the Pasteur Institute in Paris. The laboratory, utilizing cattle and small animals, prepares various serums, among others the antiplague serum. Studies are carried on in connection with antituberculosis vaccination in apes, the inoculation of apes with human malaria and its treatment, the artificial production of cancer (thus far, without results), the spirochetoses of the ape, pneumococcosis, rabies and anthrax. This laboratory has the advantage of having for experimentation animals living in their native habitat, protected against the diseases that beset them in the laboratories of Europe. The directing personnel consists of Colonel Wilbert, veterinarian; an assistant director, and a physician of the colonial forces. There are from seventy to eighty native employees.

The Ownership of Scientific Discoveries

The minister of public instruction has appointed a commission to draw up a bill to provide that, out of the profits of commercial establishments exploiting a scientific discovery, a certain proportion shall go to the benefit of the scientists who made the discovery. Such a law has been demanded for many years, and the Commission internationale de corporation intellectuelle has already discussed the subject at length. It has conceded, in principle, that it is just to recognize the existence of certain rights of ownership in scientific inventions and discoveries, just as the rights of ownership in artistic productions are recognized. A French law, which dates back three years, accords to the author of a painting and to his descendants for a period of fifty years after his death a *droit de suite*; that is to say, a percentage of the price paid for the picture every time it is resold. It has been considered unjust that a work of art for which the artist who creates it usually receives a low price should enrich several merchants by successive sales and speculations whereas the artist and his family remain in misery. It is now regarded as no more than just to apply the same principle to the author of a scientific discovery which, even though it cannot be patented, will, by exploitation, enrich a number of industrialists and merchants. Laboratory workers receive modest salaries in the faculties or the scientific institutes, but their research becomes for others a source of wealth in which they have no part. A small percentage will therefore be figured on the profits of industrialists exploiting a discovery that is not entitled to a regular patent, and the sums thus collected will be placed in a special fund destined to furnish indemnification to the scientists who are the authors of exploited discoveries. This fund will be a *caisse commune*, which can be used likewise to indemnify other scientists, authors of discoveries in pure science and not capable of exploitation. The fund may be used also for the creation of research laboratories and experimental hospitals. A special commission composed of scientists, acting under the ministry of public instruction, will administer the fund and will see to its judicious distribution.

Typhoid in the Merchant Marine

On several occasions, attention has been called to the frequency of typhoid among the sailors of passenger steamers and merchant vessels. Dr. Loir, director of the bureau of hygiene in Havre, has pointed out that often there are found on board ships entering that port sailors who have contracted typhoid in distant ports. In 1927, an epidemic in Canada caused seven cases of typhoid among the French sailors, four of whom died in the hospital. Recently, a French boat, after a four months' voyage, returned to Havre with a case of typhoid. During the last month of the voyage it had to disembark in ports of call two of its sailors with thyphoid. Prof. Léon Bernard, who has called the attention of the Academy of Medicine to this situation, emphasizes the need of making antityphoid vaccination compulsory among the personnel of merchant vessels. Before embarkation, the sailors should be required to present a certificate of antityphoid vaccination in the same manner that a certificate of vaccination against smallpox is required. The antityphoid vaccination should be repeated every ten years. The government authorities, after coming to an understanding with

the ministry of health and the ministry of the merchant marine, should introduce this health measure by means of a regulation applying to all the French personnel. On the recommendation of Prof. Léon Bernard, the academy unanimously adopted the suggestion of submitting the following proposal to the ministry of health:

The Academy of Medicine, moved by the frequency of typhoid among sailors aboard merchant vessels and the dangers that may arise from a spread of the disease in maritime cities, as a result of this situation, requests that the public authorities shall make antityphoid vaccination and revaccination compulsory for the personnel of the merchant marine.

VIENNA

(From Our Regular Correspondent)

May 27, 1930.

Appointment of New Heads of Clinics

Since the death of Pirquet, the clinic for children's diseases at the University of Vienna has been without a director, but finally Professor Hamburger of Graz has accepted the post. In a way, the fear of the friends of the deceased scientist has been realized, for Pirquet in his will expressed the wish that his clinic might be given over to one of his pupils, in order that his life work might be completed. But the dominant group of reactionaries at the university prevailed, with the result that the most decided opponent of Pirquet has been appointed his successor. In his inaugural address, Professor Hamburger stated that the first objective of his instruction in the treatment of the sick child was to convince students of the importance of assigning the proper rôle to the mother.

For the post of director of the clinic for internal diseases, which became vacant through the resignation of Professor Wenckebach, two eminent scientists of Germany have been proposed—Assmann of Leipzig, who is devoted to the task of effecting a cooperation between roentgenology and internal medicine, and Vollhard of Frankfort, whose studies on blood pressure and digestion have received much attention. However, it is probable that the powerful group in the university senate will succeed in having the candidacy of Professor Jagić, the director of a small center for internal diseases in Vienna, approved.

It is to be feared that also the clinic of internal diseases under the directorship of Professor Ortner will have to have a new director, as the professor has been ill for a long time and will doubtless be compelled to give up the post.

Oral Method of Desensitization Toward Certain Foods

At a meeting of the Vienna Medical Society, Dr. Urbach discussed the significance of alimentary idiosyncrasy as the cause of dermatoses. This condition is more frequent than is commonly supposed, not only in the form of acute toxic exanthems but also in the form of chronic urticaria, prurigo, lichen ruber urticatus and strophulus infantum. The diagnosis is seldom given correctly as a dermatosis due to alimentary idiosyncrasy, since the cutaneous tests for alimentary allergens have no practical value. On the other hand, the so-called nutrition experiment is little known. This consists in first withholding protein-containing foods from the patient and, later, possibly fruits and vegetables. After twenty-four or forty-eight hours, the itching or the urticarial or eczematous skin symptoms will abate considerably. In a given case, to determine the offending substance, vegetable protein is still suppressed, while animal proteins (beef, veal, pork, cheese, eggs, milk) are allowed the patient. If the result is negative, vegetable proteins (lentils, beans, peas, bananas, bread) are supplied; or, if a fruit or vegetable idiosyncrasy is suspected, the fruit or vegetable in question may be added to the diet. With the aid of this nutritional experiment, the nutritive allergen may be discovered. As the simple method of excluding from the diet the offending article of food is often not feasible, for practical reasons (eggs, bread, meat, milk), an attempt can be made to accustom the patient to the offending substance by a process of desensitization, or one can protect the patient by specific peptones. The second method is much simpler for the practitioner and has the advantage of immediate desensitization, which, if the treatment is continued, may be made permanent. Such desensitization is based on the principle of antianaphylaxis. Minimal doses of the anaphylactic substance concerned are ingested an hour before the meal that induces the anaphylaxis, and these small doses protect the person against the allergic reaction that is otherwise certain to develop. Urbach has had a number of specific peptones put up in packages, so as to enable the physician to determine the nutritive allergen in a short time. The peptones possess a pronounced specificity. The egg peptone protects only against egg, and not against milk; the meat peptone only against meat and the like. Urbach presented several cases of severe dermatoses completely cured in from two to three weeks by oral desensitization employed as indicated. The oral method has one advantage over the subcutaneous or the intracutaneous method, in that it requires no special technical knowledge and is perfectly harmless. Then, too, the danger of peptone shocks, which sometimes occur if other methods are employed, is eliminated.

Smallpox Vaccination in Vienna

According to the investigations carried out last year by the vaccination commission there were in the schools, at the beginning of the school year, about 10 per cent of the pupils who had never been vaccinated against smallpox. In addition, 22 per cent of the children needed to be revaccinated. Of the whole population of our city, at present, about 11 per cent is protected, whereas experience has shown that, for the control of a smallpox epidemic, an immunization of at least 50 per cent is needed. For this reason, the authorities of Vienna have petitioned the Vienna physicians to use their influence in all families in which they are counselors to secure the prompt vaccination of all persons who have not been inoculated. In a circular letter, physicians are advised that the first vaccination, if not applied when children are young, may cause marked reactions and occasionally serious complications affecting the nervous system and other organs. Therefore, the leaflet states, it is advisable to vaccinate infants after completion of the second month of life or, at the latest, between 6 and 12 months of age. Physicians are requested to report to the health service any observations in the nature of unusual reactions or complications. Only sporadic cases of smallpox ever appear in Vienna, because the protection has been, for many years, almost complete. But recently the vaccination regulations have been less strictly enforced, owing to economic difficulties. There are in the city a number of physicians who have never seen a case of genuine smallpox, because the disease has virtually disappeared. During the postwar period a few cases developed, having been brought in from without. Hence, the health service is taking all precautions to prevent the eventuality of a new outbreak. Simultaneously with the sending of the circular letter to the physicians, a leaflet was despatched to the general public calling attention to the need of vaccination. Simple instructions in regard to the conduct of a person after vaccination were added. Likewise, the importance of the vaccination certificate for the schools and other public institutions was emphasized.

Warning Against the Study of Medicine

In view of the rapid increase in the number of students of medicine, the federation of the medical societies of Austria has issued a public warning against taking up medical studies, a copy of which will be sent to all schools. It is expressed in these terms: Austria has, in proportion to its population, more physicians than any other country. The number now is twice

as great as just previous to the war, notwithstanding the marked reduction in territory and in the financial resources of the population. The additions each year are more than twice as great as the number of physicians eliminated by death and retirement from practice. Social insurance in Austria, as at present applied, takes in, directly or indirectly, 80 per cent of the population, so that only 20 per cent of the population is left to furnish independent patients. On account of the inadequate remuneration received from the sick benefit associations, the income from panel practice is small, as a rule, and only in combination with a private practice can a panel physician hope to secure a respectable income. The study of medicine, of all university studies, requires the largest outlay in money and in time. In addition, the establishing of a new practice and the procuring of a suitable office and waiting room, together with adequate instruments and other equipment, necessitates a considerable expenditure. After a degree as doctor of medicine has been obtained, it is almost impossible to establish a private practice at once. The sick benefit associations engage only such physicians as have had at least three years of hospital experience since graduation. This period of waiting will probably be still further lengthened, so that the time from the beginning of study until one can hope to establish a private practice, which now is from eight to nine years, may become from ten to twelve years. Furthermore, the number of salaried hospital physicians is limited and will in the future be still smaller, so that not every physician can count on receiving a salary during his hospital internship. He must therefore be in a position to live on other resources during this long period. In the warning, it is emphasized that robust health is a fundamental prerequisite for any one who contemplates becoming a physician; for the physician seldom is able to provide old age insurance or funds to care for himself in case of illness, and he must accustom himself to the idea of leading a stern and laborious existence. Unfortunately, almost all the professions represented in this country have published similar warnings, so that the young man who faces the problem of choosing his life calling scarcely knows what he might become without entering an overcrowded field of endeavor. That is one reason why such warnings have little effect, at least in medicine.

Benzene Poisoning in a Rubber Goods Factory

A short time ago, fifty cases of sudden poisoning in young women employed in a rubber goods factory created a sensation. In all patients, within a few weeks after beginning employment, there appeared headache, dizziness, subjective tinnitus, increasing bodily weakness, and dyspnea, in association with severe anemia. Examination of the blood revealed a destruction of the erythrocytes and later of the leukocytes. Frequently there were disturbances of vision, paralysis of the respiratory center, and cramps in some muscle groups. Of the fifty patients, seven have died. The first cases were not immediately recognized as poisoning, but the rapid succession of cases in the same factory soon pointed to the cause of the outbreak. In many of the patients there appeared in the beginning ecchymoses of the skin and the mucosae, as evidence of the destruction of the blood platelets. Such poisonings are known in the chemical industry as the result of the action of chlorine-containing substances, yet these cases were from the beginning much more grave than usual. Death due to benzene poisoning has not been previously reported from central Europe. Treatment in cases that are not far advanced is usually effective. Blood transfusion, ingestion of fresh liver or of liver extracts, large quantities of fresh air, and heliotherapy, natural or artificial, are often effective. In several cases, extirpation of the spleen was tried with success. In the last cases, which were sent from the factory to the hospital, the disorders were of a mild nature, and an abundant diet, with an excess of vitamins, sufficed to bring about a recovery.

UKRAINE

(From Our Regular Correspondent)

Odessa, June 1, 1930.

Brilliant Green as a Bactericide

While experimenting in 1928 with methods of sterilizing silkworm-catgut, Dr. S. Baccal, the scientific collaborator of the surgical clinic of the state medical institute of Odessa, discovered that the addition to an alcohol solution of minimal quantities of malachite green, an aniline paint belonging to the triphenylmethane group kills *B. tetani* in an exceedingly short time. Silkworm-catgut sewed under the skin of guinea-pigs gave no suppuration. During the period of cultivation with malachite green the silkworm-catgut was soft, elastic and resistant to rupture, and at the same time was well absorbed.

Some time later Dr. Baccal, in place of malachite green, used brilliant green. The lips of a wound, when covered with a 1 per cent alcohol solution of brilliant green, were sterile during a period of seven days after the operation; nor was it possible to obtain bacterial colonies from samples taken from the lips of the wound.

The bactericidal activity of brilliant green cannot be compared with any of the antiseptic substances known previously. In the surgical clinic the 1 per cent solution is now exclusively used for washing hands before the operation because it gives absolutely no complications. When other methods of washing the hands were used (such as the method of Ahlfeld or of Führbinger) there were some cases of surgeons infecting the wounds of the operated patients.

The 0.5 per cent alcoholic solution of brilliant green is also used in the peritonization of wounds, for smearing mucous membranes, in eye surgery and in minor surgery.

Brilliant green does not irritate the skin. It kills promptly all micro-organisms (mostly the pathogenic) and, moreover, it is cheap. It has only one defect—it gives the hands of the surgeon a color that cannot be washed away for three or four days.

Dr. Baccal is now studying methods of removing the color and is pursuing his study of the bactericidal nature of brilliant green. The Peoples' Commissariat of Health of the Ukrainian Republic assigned to him the necessary sums for this purpose.

Reform of Medical Education in Ukraine

Since the revolution of 1917, medical education in the Ukraine has passed through several changes. The medical faculties of the universities formed autonomous administrative units—medical institutes. This reform led to an increase in the number of students and professors. This was the situation until 1929, when it became clear that the need of the population, especially in the country, for physicians could not be satisfied by the existing medical institutes and that it was necessary to increase their number.

With this purpose in view, a reorganization of medical institutes began in January, 1930. They are now named institutes of protection of the people's health. The course now comprises four years instead of five, as it was formerly. These institutes are going to pass from the People's Commissariat of Education to the jurisdiction of the People's Commissariat of Health. The former will keep only the methodological direction of the institutes. This circumstance is of great importance. It will bring soviet medicine much nearer to its source.

The new medical institutes will turn out intensive specialists instead of general practitioners as before. In connection with this, each institute for the protection of the people's health will be divided into four faculties: medical, sanitary-prophylactic, odontologic and security of mother and childhood (gynecologic). Before, each medical institute had only one faculty.

Students will begin to specialize from the third year of training. More attention will be given to practical studies, which

will last throughout the year. From the third year the students must pass their two months of vacation in the country hospitals learning the technic of medicine and getting acquainted with the conditions of work and life in the village and with the work of a doctor in the "country medical district."

Students will be received in the institutes three times a year, so that studies will continue throughout the year without interruption. These institutes, like other high schools of the Ukraine, will be conducted on the full week plan. Every fifth day is a holiday, whether or not it is a Sunday, a church holiday or a simple week day. But the work goes on uninterruptedly. There is no general holiday, with the exception, of course, of five state holidays, each group having its own rest day.

Included in the number of required subjects is the study of one foreign language, in most cases German, and also physical culture. Examinations are abolished. Instead of them the seminary method will be used, which makes it possible to verify the knowledge of the students much more regularly and frequently.

All these changes, as well as others, demand much energy from the mass of students and professors for the execution of the academic plans. The People's Commissariat of Health believes that within a short time this reform will fully satisfy the need of the population of the Union of Socialist Soviet Republics for physicians.

AUSTRALIA

(From Our Regular Correspondent)

June 6, 1930.

Cremation in Australia

The disposal of the dead by means of a cremation process has not been practiced to any serious extent in Australia, but there is evidence that it will be made more use of in the future. At present there are two crematoriums in Australia, one in Sydney and the other in Melbourne. The Sydney crematorium is controlled by a public company; in 1926 there were 138 cremations and in 1928 there were 400. The Melbourne crematorium is controlled by the trustees of the general cemetery; in 1927 there were 32 cremations and in 1929 there were 160. During recent months there has been an increasing interest in cremation in Brisbane. The *Daily Mail* of that city published a symposium of the views of the leaders of the religious sects. The leaders of the Church of England, Methodist, Presbyterian and Congregational churches expressed themselves as being favorable to cremation, and they did not consider that such a method of disposal was incompatible with their beliefs. The leader of the Roman Catholic Church, however, considered that it was repulsive that the body, which in life was the temple of God, should be destroyed by fire. He stated that cemeteries had never been proved a menace to the health of any community. In February, the council of the Queensland branch of the British Medical Association approved of the establishment of a crematorium in Brisbane. A public company has now been floated to build a crematorium in Brisbane at a cost of £7,500. The furnace will be constructed to burn oil.

Dental Education in Australia

Who is to pay for dental education? is a problem that is exercising the mind of the professor of dental surgery in Melbourne, F. C. Wilkinson. In New South Wales and South Australia the dental colleges are a department of the university and, as such, share in the grants, scholarships and bursaries. In Queensland the dental college is controlled by a joint board composed of university and dental authorities. The standard of training is at present being revised and raised and in the course of a few years it is expected that the college will come more directly under the control of the University of Queensland. In Melbourne the dental college and hospital is independent of the university, does not receive any government grant, and is forced to exist on the students' fees and a grant from a charitable source for the purpose of defraying the cost of dental treatment of persons unable to pay private fees. The students' fees are already a third higher than those paid by students attending any of the university departments. A gradually increasing overdraft and an annual deficit are forcing the board of control of the dental college in Melbourne to consider closing the institution. The present standard of training at the college can compare favorably with that of similar colleges in England. It is hoped that the state government will grant a sum of money to save the situation.

Prohibition Defeated in Victoria

A public vote on the question whether liquor licenses should be abolished throughout Victoria was taken, March 29. Voting was compulsory for the 1,029,000 electors on the roll. Sixty per cent of the total votes polled were necessary to carry prohibition, but only 42 per cent were in favor of the proposal, and it was accordingly defeated. It will be eight years before another licensing poll is held in the state.

BERLIN

(From Our Regular Correspondent)

June 12, 1930.

The Problem of Abortion

In recent years—more from a political than from a medical point of view, but nevertheless with the evident support of medical circles whose political sympathies are with the Left, theatrical performances (which, in some instances, have degenerated into mere mass meetings) have been employed to create sentiment in favor of the abolition of section 218 of the penal code of Germany, by which abortion, unless there are recognized medical indications, is prohibited. The Deutscher Aerztevereinsbund, as the leading organization of the medical profession, has therefore published the following resolution:

> In the face of the growing agitation in favor of lifting the ban from abortion, which is carried on—often with the employment of questionable methods—in public gatherings, in the press, in motion pictures, and, more recently, also on the stage, the executive committee of the Deutscher Aerztevereinsbund regards it a duty again to emphasize most vehemently that one of the chief professional duties of the physician is to preserve budding life. An interruption of pregnancy, which is always associated with a certain measure of injury to health and frequently is a menace to the life of the pregnant woman, will not be undertaken by a physician unless continuance of pregnancy involves serious danger to the health or life of the mother. Recognition of the so-called social indications, in view of the indefinite and the elastic nature of the term, would be tantamount to the acceptance of the legality of abortion, against which attitude, for medical, ethical and demographic reasons often emphasized, the federation feels constrained to utter most decided warnings. On the contrary, the federation expresses the best medical point of view in entertaining the hope that all measures of the government and of associations interested in the care of the sick may be so strengthened that the willingness to have children may be enhanced among the German people.

Surgeons Oppose Prohibition of Rapier Dueling

The executive committee of the Deutsche Gesellschaft für Chirurgie has published the following statement: A rumor is afloat to the effect that a bill is being drawn up that, if enacted into law, will impose a heavy penalty on the *schlägermensur* (the duel with a rapier, or straight two-edged sword, to which students at the German universities are wont to resort as a pastime and as a means of developing physical courage), on the ground that it is "a duel with deadly weapons." The executive committee of the Deutsche Gesellschaft für Chirurgie, to which the right to express an expert opinion must be accorded, warns against the enactment of such a law and assigns the following reasons: 1. The rapier is not to be regarded as a deadly weapon if the required bandages and other precautions are employed. 2. The *schlägermensur* is a contest or a form of sport, and not a duel within the usual

meaning of the term. 3. The injuries produced by the *schläger*, or rapier, are much less dangerous than those inflicted by the fist in boxing, as is clearly proved by a comparison of the number of fatalities and permanent injuries resulting in the two forms of contest. Deaths following rapier duels have nearly always been indirect results (due chiefly to blood poisoning or late hemorrhages); deaths resulting from boxing are frequently direct results of the contest. If the legislators wish to avoid the reproach that they are passing class legislation against the students, they will at least have to prohibit boxing at the same time, for the reason that the gloved fist is a much more dangerous weapon, from the standpoint of fatal injuries, than the *schläger*, or rapier, and because boxing is at least just as much of a duel as is a rapier contest. No government, however, will probably want to make itself ridiculous by prohibiting boxing; for it is evident that every masculine sport is associated with dangers. Without doubt, mountain climbing, swimming, horseback riding and football are much more dangerous than the rapier duel. In addition, it may well be considered that boxing, as practiced today, is essentially a money-making scheme, whereas the rapier duel is not contaminated by the thought of material profits but has as its sole objective a testing and strengthening of physical courage.

A Tour of Welfare Workers Through Germany

A few weeks ago, a group of women belonging to the Women Public Health Officers' Association of England paid an official visit to the institutions of public welfare and public health services in Hamburg, Berlin, Dresden, Jena, and the Westphalian industrial region. In Hamburg, an official reception was tendered the group by the superior public health service. In Berlin, President Hamel of the federal bureau of health received the guests in the name of the *reich*. At a reception in the Kaiserin-Auguste-Viktoria-Haus, whose special service is the combating of infant mortality, Professor Langenstein called attention to the importance of international cooperation with regard to health activities affecting the children.

Dr. Schmidt-Ott Honored

The seventieth birthday of Dr. Schmidt-Ott, formerly Prussian minister of public instruction, June 5, gave an opportunity to a wide circle of friends to express their hearty appreciation of the work that he has performed; especially, that of establishing and directing the "Notgemeinschaft der deutschen Wissenschaft." By means of this foundation, created during the great distress of the postwar years, Dr. Schmidt-Ott performed a service whereby the progress of science and the training of future scientists were greatly advanced. The Notgemeinschaft der deutschen Wissenschaft and the beneficent activities of the Rockefeller Foundation supplement each other. It was eminently fitting that this impressive celebration should be attended by wide circles of the scientific world: representatives of the federal and state governments, the parliaments, the universities and the higher schools of learning; members of the Academy of Sciences; a group of university instructors; the members of the Stifterverband der Notgemeinschaft der deutschen Wissenschaft; representatives of the Germanic Museum, of the Gesellschaft zum Studium Osteuropas, of the Deutscher Verein für Kunstwissenschaft, and members of numerous organizations, leagues and associations who have benefited by the activities of Dr. Schmidt-Ott as president of the Notgemeinschaft der deutschen Wissenschaft. Leading German scientists and literary men and the Prussian minister of public instruction delivered addresses. Dr. Wirth, the federal minister of the interior, presented Dr. Schmidt-Ott, together with a personal letter from the president of the *reich*, von Hindenburg, the greatest distinction that the German *reich* can bestow; the *Adlerschild* (the eagle emblem) with the inscription "To the Great Supporter of German Science." Other distinctions, such as the appointment as an honorary member of the Saxon Academy of Sciences, and honorary doctor of philosophy of the Vienna Academy, showed the high appreciation for the personality and work of the septuagenarian. Dr. Schmidt-Ott had received previously the honorary titles of doctor of theology, doctor of philosophy, doctor of medicine, and doctor of the science of engineering; he had been created likewise honorary member of the Academy of Sciences in Berlin and of the Gesellschaft der Wissenschaften in Göttingen, and in connection with the dedication of the new Institute for Medical Research in Heidelberg he had been chosen an honorary member of the Heidelberg Academy of Sciences.

Effects of Fluid Intake on Body Weight

In the *Zeitschrift für ärztliche Fortbildung*, Prof. H. Strauss of Berlin discusses the effects of ingested fluids on the body weight. He takes the view that drinking during meals is chiefly a factor that has a psychologic effect. However, some beverages may contain ingredients rich in calories. Experience shows that drinking during meals improves the appetite. That the mere ingestion of liquids does not of itself increase the ontake of fat is evident from the fact that an exclusive milk diet, of from 1½ to 2 liters of milk daily, causes a loss of weight. A generous intake of fluids, however, may lead to an increase of the body weight through the storing of water by the organism. Reduction of fluid intake alone does not suffice to produce a reduction in weight in obese persons; the salt intake must be reduced at the same time. If, therefore, a loss of body weight is desired, drinking during meals is ordinarily not advisable, especially fluids with nutritious ingredients —for example, beer, should be avoided.

Films of Organs in Motion

The Roentgenkino-Gesellschaft of Berlin recently exhibited the latest results of roentgenkinematographic photographs of motor processes within the body, in accordance with the system of Drs. Gottheimer and Jakobsohn. In the last two years the system has been improved. Formerly exposures were limited to seven seconds, but it is now possible to lengthen the exposure to twenty-five seconds by increasing the constancy of the illuminating power of the roentgen tube. The illuminating power itself was enhanced, also, so it is possible to have the tube more than 70 cm. away from the patient and thus to avoid all possibility of causing skin "burns." The films showed the normal and pathologic heart activity. Especially valuable were observations on the heart after long periods of rest and on the same heart after long periods of exertion in some sport activity. The views of the heart were followed by photographs of the upper margins of the diaphragm during quiet respiration and during respiratory movements influenced by coughing and talking. Of especial interest were the lateral views of a person speaking whose tongue had been made visible by the application of a coating of bismuth subcarbonate. It may be that, by the projection of such views of persons speaking, progress in the training of deaf mutes will be attained, since they can study in detail the motions of the tongue in producing various letters.

Organization to Promote Graduate Study Among Physicians

The medical societies of the West German industrial region, the medical faculties of the universities of Cologne, Bonn and Münster, the medical academy in Düsseldorf, and the city of Essen have sponsored a "Haus für ärztliche Fortbildung" which was recently opened in Essen. The purpose of the movement in addition to the organization of special courses and addresses on professional topics is to give physicians in private practice, who attend no patients in the hospitals, an opportunity, through clinical visits, to observe and examine patients of all kinds at the bedside.

Marriages

ELDRIDGE HOUSTON CAMPBELL, JR., to Miss Eleanor A. Brown, both of Baltimore, July 2.

FRANCIS LEO SHAY to Miss Helen Wilson Butler, both of New Haven, Conn., June 16.

EUGENE R. VAN METER, St. Louis, to Miss Helen Fribley of Assumption, Ill., June 11.

EDWIN B. JARRETT, Baltimore, to Miss Dorothy Duncan of Govans, Md., June 28.

ISRAEL J. WOLF, Paterson, N. J., to Miss Rowee Kurland of New York, July 6.

Deaths

James McDowell Patton ⊕ Omaha; University of Nebraska College of Medicine, Omaha, 1904; professor and head of the department of ophthalmology at his alma mater; member of the American Academy of Ophthalmology and Oto-Laryngology and the American College of Surgeons; past president of the Omaha Douglas County Medical Society; on the staffs of the University, Douglas County, Nebraska Methodist and Clarkson Memorial hospitals; aged 53; died, June 20, of angina pectoris.

James William Powers ⊕ Wichita Falls, Texas; St. Louis University School of Medicine, 1916; member of the Associated Anesthetists of the United States and Canada; past president of the Wichita County Medical Society; served during the World War; on the staff of the Wichita General Hospital; aged 46; died, June 16, of heart disease and nephritis following an operation on the gallbladder.

Bertha Dalrymple Berger, Annapolis, Md.; University of Southern California College of Medicine, Los Angeles, 1903; at one time assistant in pediatrics, pathology, histology and clinical microscopy, Womens Medical College, Baltimore; formerly on the staff of the Western State Hospital, Staunton, Va.; aged 70; died, June 7, in the Emergency Hospital, of cerebral hemorrhage.

John Palmer, Jr. ⊕ Wilmington, Del.; University of Pennsylvania School of Medicine, Philadelphia, 1882; member of the American College of Surgeons; for forty years member of the board of education; on the staff of the Wilmington General Hospital; aged 70; died, in June, of pulmonary edema and multiple myeloma.

James Henry Drohan, Brockton, Mass.; Harvard University Medical School, Boston, 1896; member of the Massachusetts Medical Society; past president and councilor of the Plymouth District Medical Society; aged 62; died, April 15, of endocarditis and dilatation of the heart.

Parker P. Horner, Conifer, Pa.; University of Louisville (Ky.) School of Medicine, 1894; member of the Medical Society of the State of Pennsylvania; aged 63; died, April 13, in the Punxsutawney (Pa.) Hospital, of carcinoma of the stomach.

George Austin Shank, Huntington Beach, Calif.; Kentucky School of Medicine, Louisville, 1898; member of the California Medical Association; aged 67; died, May 20, in the Santa Ana (Calif.) Valley Hospital, of intestinal obstruction.

Mordecai Robert Bren, Livermore, Calif.; Columbia University College of Physicians and Surgeons, New York, 1896; aged 56; died, June 4, in the U. S. Veterans' Hospital, Palo Alto, of myocarditis and coronary infarct.

Arthur George Griffin ⊕ Andover, Mass.; Harvard University Medical School, Boston, 1883; formerly on the staff of the Malden (Mass.) Hospital; aged 76; died, June 7, while on a fishing trip in Rangeley, Maine.

Henry Alfred Young, Chicago; Cleveland College of Physicians and Surgeons, Medical Department Ohio Wesleyan University, 1901; aged 56; died, July 5, in the Alexian Brothers Hospital, of cardiorenal disease.

Ernest J. Cowden, North Warren, Pa.; University of Buffalo School of Medicine, 1882; member of the Medical Society of the State of Pennsylvania; aged 70; died, June 11, of heart disease and nephritis.

Morey L. Teeple, Morley, Mich.; Grand Rapids Medical College, 1898; member of the Michigan State Medical Society; aged 67; died, June 6, of injuries received when struck by an automobile.

Charles H. Adair, San Francisco; Philadelphia University of Medicine and Surgery, 1870; aged 90; died, June 5, of gastric ulcer, intestinal hemorrhage, chronic myocarditis and hypostatic pneumonia.

Dade Trueman Phillips, Barnesville, Ohio; Starling Medical College, Columbus, 1897; member of the Ohio State Medical Association; aged 62; died, in June, of acute dilatation of the heart.

Robert Craig Dryden, Pima, Ariz.; Missouri Medical College, St. Louis, 1880; member of the Arizona State Medical Association; aged 73; was killed, June 14, in an automobile accident.

Henry G. Bruner, Philadelphia; Jefferson Medical College of Philadelphia, 1884; member of the Medical Society of the State of Pennsylvania; aged 68; died, June 25, of heart disease.

George W. Baylor, Milltown, Ind.; Louisville (Ky.) Medical College, 1876; Kentucky School of Medicine, Louisville, 1882; aged 81; died, June 12, of pulmonary tuberculosis.

Luther P. Carlyle, Chula, Mo.; Marion-Sims College of Medicine, St. Louis, 1892; member of the Missouri State Medical Association; aged 63; died, February 22.

Samuel Rhoads, Pasadena, Calif.; University of Pennsylvania School of Medicine, Philadelphia, 1901; aged 52; died, May 24, of chronic pulmonary tuberculosis.

Thomas Allen Mann, Colmesneil, Texas; University of Texas School of Medicine, Galveston, 1930; aged 23; was killed, March 3, in an automobile accident.

Carl A. Weil, Chicago; College of Physicians and Surgeons, Chicago, 1887; aged 69; died, May 17, of acute dilatation of the heart and chronic myocarditis.

Robert Lee Rierson, Oakland, Calif.; Medical Department of the University of the City of New York, 1887; aged 64; died, May 5, of arteriosclerosis.

Fred Grant Burrows, Newman, Calif.; Harvard University Medical School, Boston, 1897; aged 63; died, April 18, of pneumonia and myocarditis.

George Burwell Wilson, San Francisco; Cooper Medical College, San Francisco, 1892; aged 69; died April 29, of angina pectoris and arteriosclerosis.

Neal Horton, Plumerville, Ark.; University of Arkansas School of Medicine, Little Rock, 1906; aged 49; died, May 21, of cerebral hemorrhage.

Arthur H. Bryant, Santa Monica, Calif.; Eclectic Medical College of the City of New York, 1877; aged 73; died, May 19, of cerebral hemorrhage.

John Wesley Crawford, New York; McGill University Faculty of Medicine, Montreal, 1912; aged 45; died, June 27, of agranulocytic angina.

George Chillcote Barton, Lakeland, Fla.; Jefferson Medical College of Philadelphia, 1880; aged 77; died, May 17, of cerebral hemorrhage.

Louis Victor Rochette, Lowell, Mass.; School of Medicine and Surgery of Montreal, 1887; aged 67; died, June 4, of chronic myocarditis.

Joseph S. Kitchen ⊕ Philadelphia; Jefferson Medical College of Philadelphia, 1906; aged 52; died, May 15, of myocarditis and arteriosclerosis.

Walter S. Conn, Louisville, Ky.; University of Louisville School of Medicine, 1887; aged 71; died, June 25, of cerebral hemorrhage.

Wilmer G. Lockard, New Castle, Colo.; Baltimore Medical College, 1896; aged 62; died, April 7, of cerebral hemorrhage.

Richard L. Wright, Philadelphia; Jefferson Medical College of Philadelphia, 1869; aged 80; died, May 19, of chronic myocarditis.

Alex C. Northum, Charleston, Ark. (licensed, Arkansas, 1903); aged 79; died, May 13, in Boswell, Okla., of coronary thrombosis.

Addie E. F. Gray, Chicago; Hering Medical College, Chicago, 1899; aged 73; died, June 30, of acute myocarditis and nephritis.

David Lipschutz, Pittsburgh; University of Pittsburgh School of Medicine, 1918; aged 40; died, June 7, of pneumonia.

Lester C. Stadler, Ouray, Colo.; Rush Medical College, Chicago, 1880; aged 72; died, March 18, of pernicious anemia.

Anton J. H. Jansenius, St. Andrew, Fla. (licensed, Florida, 1906); aged 81; died, May 27, of cerebral hemorrhage.

Moses Edwin Smith, Plymouth, Calif.; Boston University School of Medicine, 1875; aged 78; died, May 24.

Bureau of Investigation

THE VREELANDS QUACKERY

A Grow-Hair-Quick Concern Declared a Fraud

Clayt Vreeland of Cleveland, Ohio, has for some years been defrauding the baldheaded. He did business under such trade names as "The Vreelands, Inc.," "The Vreelands" and "Vreeland." Finally the postal authorities got around to Mr. Vreeland and on June 24, 1930, the Postmaster General, on the recommendation of Mr. Horace J. Donnelly, Solicitor of the Post Office Department, issued a fraud order debarring from the United States mails The Vreelands, Inc., The Vreelands, Vreeland, and their officers and agents, as such.

The Solicitor, summing up the facts in the case, in his memorandum to the Postmaster General, explains that this piece of quackery was originated by Clayt Vreeland and was carried on by the financial help of Arnold R. Stern. Stern and Vreeland had a disagreement and, at their request, the state officials appointed a receiver to find a purchaser for the business. Mr. Walter L. Spring of Cleveland was appointed as the receiver.

In March of this year the postal authorities called on Vreeland to show cause why a fraud order should not be issued. At the time set for the hearing Mr. Spring appeared to represent the concern.

The business was the rather simple one of selling a preparation for the alleged growing of hair. The stuff was called "Hairerbs." There was also a shampoo supplementary to the "treatment." Vreeland, who is not a physician, chemist or pharmacist, claimed to have discovered the formula for Hairerbs. In his advertising he stated that he "discovered this treatment after years of work," because he was bald and had not been able to find anything to grow hair. To the postoffice inspector who was assigned to the case, Vreeland stated that he was twenty-one years of age when he grew hair on his bald head. Evidently, he must have started his research in this particular field when he was quite youthful. He further admitted, according to the postoffice report, that it took him two or three years to grow the hair, although in the advertising he claimed to "Grow New Hair Quick."

In the Vreeland file that has been collected during the past few years by the Bureau of Investigation, there is the usual farrago of testimonials. The only one of any special interest to the medical profession is that purporting to come from a physician, described as "Dr. C. J. Cannon, Chief Surgeon, Nottingham Hospital, Cleveland, Ohio." This testimonial has been thought of sufficient importance by Vreeland to be specially featured, and in view of the statements made in it, one could hardly blame Vreeland for playing it up. The testimonial reads as follows:

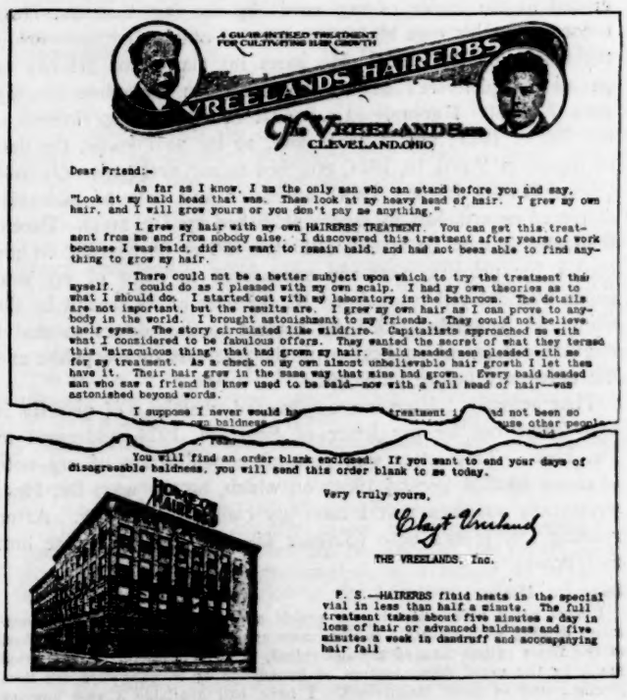
> "If the scalp is not atrophied and bound down to the skull, the hair follicles too far gone for HAIRERBS to affect them, we may expect excellent results from this treatment as it is readily absorbed by the hair ducts."

Vreeland's hair-growing mixture was said—by Vreeland—to have been made by putting about 25 pounds mixture of leaves of sage, rosemary, jaborandi and maiden hair fern into forty gallons of water, boiling the mixture and condensing the steam that went over. To five gallons of the distillate there was added five gallons of glycerin. Examination by the federal chemists brought out the fact that the final product was essentially glycerin and water, half and half, with a slight trace of sage oil that had been carried over in the distilling process. There was no pilocarpine nor any evidence of the presence of that drug. Further evidence brought out at the hearing indicated that the original mixture with which Mr. Vreeland claimed to have raised hair on his bald head contained no glycerin and was made only from jaborandi and rosemary leaves!

Vreeland's mixture of glycerin and water was put up in 4½-ounce bottles, which sold for $5. With each bottle came a small vial and the optimistic purchaser was instructed to pour out into the vial enough of the mixture for one "treatment," stand the vial in a cup of hot water until it became warm, and then rub the stuff into the scalp, having previously covered the head for about one minute with a turkish towel wrung out in hot water. After the glycerin-water mixture had been rubbed into the scalp, a hot towel was again supposed to be put on the scalp, followed by a towel wrung out in cold water, and the scalp then dried.

At the hearing the government showed that this mixture was not a "natural" way to cultivate hair; that it would not get "under the skin" as claimed in the literature; that it would not supply "nourishment" to roots of the hair nor would it succeed "where hair tonics fail." Vreeland further claimed that his preparation was germicidal, a superior cleansing agent and a solvent. Medical testimony at the hearing showed that good soap and water is as good a cleansing agent as the Hairerbs.

As part of his come-on advertising, Vreeland reproduced a letter addressed to himself from a Cleveland bank—The Guardian Trust Company—in which it was stated that the commercial account of Vreelands, Inc. had averaged several thousand dollars and that Vreeland himself had with the bank


A GUARANTEED TREATMENT FOR CULTIVATING HAIR GROWTH

VREELANDS HAIRERBS

The Vreelands Co.
CLEVELAND, OHIO

Dear Friend:-

As far as I know, I am the only man who can stand before you and say, "Look at my bald head that was. Then look at my heavy head of hair. I grew my own hair, and I will grow yours or you don't pay me anything."

I grew my hair with my own HAIRERBS TREATMENT. You can get this treatment from me and from nobody else. I discovered this treatment after years of work because I was bald, did not want to remain bald, and had not been able to find anything to grow my hair.

There could not be a better subject upon which to try the treatment than myself. I could do as I pleased with my own scalp. I had my own theories as to what I should do. I started out with my laboratory in the bathroom. The details are not important, but the results are. I grew my own hair as I can prove to anybody in the world. I brought astonishment to my friends. They could not believe their eyes. The story circulated like wildfire. Capitalists approached me with what I considered to be fabulous offers. They wanted the secret of what they termed this "miraculous thing" that had grown my hair. Bald headed men pleaded with me for my treatment. As a check on my own almost unbelievable hair growth I let them have it. Their hair grew in the same way that mine had grown. Every bald headed man who saw a friend he knew used to be bald—now with a full head of hair—was astonished beyond words.

I suppose I never would h[ave] [t]reatment i[f] [I] had not been so [ba]ldness [ca]use other people

You will find an order blank enclosed. If you want to end your days of disagreeable baldness, you will send this order blank to me today.

Very truly yours,

Clayt Vreeland

THE VREELANDS, Inc.

P. S.—HAIRERBS field heats in the special vial in less than half a minute. The full treatment takes about five minutes a day in loss of hair or advanced baldness and five minutes a week in dandruff and accompanying hair fall

$6,000 in a special refund account. This was published as proof that what Vreeland called his "refund guarantee" was financially backed.

The guarantee, as published in the newspapers, was to the effect that the Hairerbs treatment would grow new hair or Vreeland would refund the money. The actual guarantee, however, required the victim to purchase and use the stuff for *nine consecutive months*, and it was necessary for the individual to fill in a blank furnished with each 4½-ounce bottle and mail it to The Vreelands promptly following the purchase. The guarantee stated that Vreeland would refuse to consider any claim for a refund unless these blanks were sent in *promptly*. It was, apparently, true that in those cases in which the victim kept up enough interest in the matter for nine full months and filled in the numerous blanks and sent them in promptly following the purchase of the bottles of Hairerbs and finally applied for a refund that the refund was made.

A report from the postmaster at Cleveland in April, 1930, showed that Vreeland, under his various trade names, was receiving approximately 250 pieces of mail daily, but that when an advertising campaign was under way Vreeland received approximately 800 pieces of mail daily.

As a result of the Post Office investigation, the Vreeland scheme was declared to be one of obtaining money through the mails by means of false and fraudulent pretenses, representations and promises, and as a result, a fraud order was issued.

Correspondence

PRIORITY AS TO THE DISCOVERY OF THE STEENBOCK PROCESS OF ANTIRACHITIC ACTIVATION

To the Editor:—In recent publications (THE JOURNAL, April 12, p. 1163, June 14, p. 1885), Dr. Alfred F. Hess has laid claim to prior rights to the discovery of the antirachitic activation of foods and medicinals by ultraviolet radiation. I regret exceedingly that Dr. Hess should feel the necessity for an argumentative presentation because my statement that "experiments of Hess and his co-workers followed ours closely" (THE JOURNAL, Dec. 14, 1929, p. 1868) was made editorially, merely to call attention to the fact that Dr. Hess had secured similar results, with no emphasis whatever on the word "followed."

Actually, however, it may be true that subconsciously I was guided in the choice of my words by the fact that Dr. Hess, according to his own statement, carried out his experiments in the *winter* of 1923-1924. He bases his claims for priority on an address delivered before the American Pediatric Society, June 7, 1924. I completed my first conclusive experiments in the *fall* of 1923; and, furthermore, so far as I know, the date of reception, April 18, 1924, attached to my first paper (*J. Biol. Chem.* **61**:405 [Sept.] 1924) antedates any date of addresses delivered or attached to papers published by Dr. Hess. Parenthetically it may be stated, although it has no bearing on my claims for priority, that the appearance in print of my first paper was delayed from April 18, the date of its receipt by the editor, to September, 1924, by request to the editors so that I might file a patent application in the interests of the public and the university before publication.

That actually I have not emphasized questions of priority is best borne out by my letter of Sept. 24, 1924, addressed to Dr. Hess. This letter was sent after publication of my note (*Science* **60**:224 [Sept.] 1924) on which, by the way, Dr. Hess wrongfully assumes that I base my claims of priority. After reading Dr. Hess's note (*Science* **60**:269, 1924), I wrote him as follows:

Dear Dr. Hess:

I have noted with interest your article and that from the Yale laboratories dealing with rickets. It illustrates again how ideas are the product of the times rather than of the individual, and, fortunately, science gains much by the rapid dissemination of knowledge as investigators are thus strengthened in their convictions. I have had available a vast amount of unpublished material for some time, my first paper having been submitted to the *Journal of Biological Chemistry* in April; but foreseeing the possibilities of unwarranted, unscientific commercialization of the findings, I have reluctantly postponed its appearance to secure the situation against such a possibility. I should like to know if you have also applied for patent rights in the name of your institution or otherwise, as I have a growing conviction that commercial interests should not be allowed to exploit scientific findings indiscriminately.

I should be glad to get your reaction on this matter.

To this letter Dr. Hess replied as follows:

Sept. 30, 1924.

My Dear Doctor Steenbock:

I was pleased to receive your letter as I had intended writing you after reading your communication to *Science*. As you say, generally an idea is not limited to the mind of a solitary individual but is to a certain extent the product of the times. I have confined my experiments to producing the antirachitic factor and obtained positive results *last winter*, reporting them in June at the meeting of the American Pediatric Society, *the Proceedings of which will be published in the October number of the American Journal of Diseases of Children*. I feel that we must rely on the microscopic lesion of the bones in making the diagnosis of rickets.

We discussed the question of applying for a patent but have not made application, as, in principle, the department is averse to patenting discoveries, although this would seem to be necessary under special circumstances. The question, however, is one which will have to be threshed out and can be supported by strong arguments on either side. Personally, *I believe that the property of ultraviolet radiations on foods will not have wide dietetic application*, although its scientific importance may be great [italics added by the author].

It follows from Dr. Hess's letter that he did not foresee the probability of commercialization of the irradiation process even in September, 1924; but in February, 1925, the University of Wisconsin received a letter written with Dr. Hess's knowledge by the Committee on Patents of Columbia University, requesting the cooperation of the University of Wisconsin in securing patent protection.

Actually, of course, this is all a matter of little interest to the public. Time passes on, and the irrelevant facts of priority are forgotten. The important facts are that the discovery was made and that the public has been protected against threatened exploitation. If the applications for license to operate under the Steenbock patent can be taken as an indication of commercial value, it can rightfully be assumed that, without the existence of my patent, both the food and the pharmaceutic fields would now be flooded with spurious preparations.

In spite of the earlier date of my work, I am indeed very happy to share the credit for the developments in this field with Dr. Hess, as well as with others who by their meritorious work have made the results of the discovery available to the public; but I seriously question whether in this age of rapid developments and the decreasing importance of individual contributions the public is at all interested in academic arguments of priority.

HARRY STEENBOCK, PH.D., Madison, Wis.

THE UNITED STATES PHARMACOPEIAL CONVENTION

To the Editor.—I was much interested in your editorial regarding the Pharmacopeial convention. I think you were quite right in making it "hot" but it seems to me that your wrath was directed in the wrong place. "The fault, dear Brutus, lies not in our stars but in ourselves."

You will recall that every medical school should be officially represented at the Pharmacopeial convention by three representatives, and that the medical schools are ex officio members of the convention. A few of, but by no means all, the medical schools of the country had one representative, but I know of none that were represented by more. As a matter of fact, some of the medical schools, although they appointed three delegates, did not pay the expenses of any. The schools of pharmacy were somewhat better represented. The representation of the state medical societies was much worse. Only a few of them showed up and some of these were members of manufacturing drug firms, who had been appointed as representatives of state medical societies. Since the drug firms paid the way of their members, it saved the state societies expense. In fact, almost all of the drug firm representation that you so justly complain of was the direct fault of the state medical societies whom they represented.

I think you are doing a great injustice as well as attempting to reverse the ordinary laws of physics if you expect water to flow higher than its source. I think you ought to begin and condemn the state medical societies who allowed themselves to be thus represented rather than blame the manufacturing chemists if they look out for their own interests more assiduously than the medical societies look out for the broader interests of medical science and practice.

If the state medical societies and medical schools had sent their representatives to the Pharmacopeial convention as conscientiously as the pharmacists, academic and commercial, did, there would be no complaint of inadequate representation of the medical profession. The medical representatives would not be outvoted and the pharmacists would probably not have justification for their complaint that, since most of the work on the Pharmacopeia would be done by pharmacists anyway, it made little difference whether the medical men had a larger representation or not.

ARTHUR D. HIRSCHFELDER, M.D., Minneapolis.
Professor of Pharmacology, University of Minnesota Medical School.

EPICONDYLITIS HUMERI

To the Editor:—In connection with the article entitled "Epicondylitis Humeri," by Drs. K. G. Hansson and I. D. Horwich (THE JOURAL, May 17), I would call attention to two references:

Stewart, L. F., and Ross, G. A.: A Study of Sprain-Fractures, *Ann. Surg.* **55**: 71-87, 1912.

Stewart, L. F., and Ross, G. A.: A Study of Sprain-Fracture as an Essential to the Occurrence of Dislocation, *Ann. Surg.* **56**: 599-621, 1912.

These two papers present considerable evidence showing the superiority in tensile strength of muscle and tendon, as well as ligament, over bone. In the light of the evidence recorded in these papers, certain of the cases of "epicondylitis humeri, or tennis elbow," should properly be recorded as sprain-fractures.

Priority in scientific or experimental observations seems to me quite unimportant; but the present-day tendency of giving an unusual name to comparatively simple conditions is harmful to the patient and reflects on the physician who is prone to grasp for the unusual and new. Our patients will be assured of better treatment when we refuse to permit fractures to masquerade under any other name than fracture. The rest and fixation so essential to the successful treatment of these conditions is then assured. Recently I found a man dying with a leg filled with pus from a tibial osteomyelitis. The history was the typical one known to surgeons for fifty years. A young ship's doctor who first saw him called the condition "trench leg." The term caught the fancy of other physicians, who stood by with wonder and interest until the ensuing septicemia made drainage of the leg an unsuccessful procedure.

LEVER F. STEWART, M.D., Clearfield, Pa.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

NEPHRITIS OR NEPHROSIS

To the Editor:—Certain authors of articles on medical subjects use the word "nephrosis" in a way which implies that they do not mean "nephritis." In fact, a recent article in THE JOURNAL begins: "It is now generally considered that nephrosis is not primarily a kidney disease." Appleton's Medical Dictionary does not contain the word and Dorland's defines it as "any disease of the kidney." Please be kind enough to make clear the significance of the word "nephrosis" as distinguished from "nephritis." If "nephrosis" means a transient nephritis, due to a primary focus of infection elsewhere, it appears to me to be an unnecessary coinage creating confusion of meaning rather than contributing to precision and clarity of meaning. LINDSAY PETERS, M.D., Alameda, Calif.

ANSWER.—The modern concept of medical kidney diseases implies that renal disorder is a local manifestation of a coextensive derangement of all the bodily organs participating in the elimination of the metabolic end-products that eventually appear in the urine.

For clinical purposes the terms nephritis and nephrosis are used to signify well defined pathologic changes in the eliminatory terminal, the kidneys. These pathologic changes find their functional expression in characteristic eliminatory deficiencies. The term nephritis is reserved for the results of renal capillary toxicosis that leads to morphologic and functional disturbances in the glomeruli. One of the leading nephritic symptoms is the retention of the organic metabolic end-products, which, if occurring within the blood, is expressed by a rise of the nitrogenous compounds in the blood to abnormal figures. If, however, the retention of these organic split products occurs mainly in the intermediate structures, the investigation of the blood chemistry reveals abnormal high content of the blood indican and the discovery of xanthoprotein in the blood. The changes in the capillary walls of the glomeruli lead to diapedesis of red cells, as revealed by hematuria, and to exudation into Bowman's capsule. In addition, the blockading of the renal capillary system may produce rise of the blood pressure. The subsequent demand of increased heart action leads invariably to more or less pronounced cardiac involvement. Edema, if appearing in nephritis, shows a high content of proteins but no urinary salts. So-called albuminuric retinitis occurs only in patients with nephritis.

Nephrosis includes renal derangements expressed by degeneration of the tubular epithelium without involvement of the glomeruli. The most prominent clinical feature of nephrosis is the retention of the inorganic metabolic end-products, which mainly occurs within the intermediate structures. Nephrosis does not produce hematuria, hypertension or retinitis. Nephrotic edema contains no proteins but a high percentage of urinary salts, mainly represented clinically by the chlorides. Nephrosis is always accompanied by a disturbance of the entire lipoid economy. This finds its expression in the appearance in the urine of doubly refracting lipoids and cholesteremia.

Coexistence of nephritis and nephrosis may occur, and this combination is as a rule denominated as mixed nephritis.

Because nephritis and nephrosis are only part of a general somatic disorder, some authors prefer to speak about nephritic and nephrotic conditions instead of using the traditional terms of nephritis and nephrosis.

REGENERATION OF NERVE

To the Editor:—If either the external or the internal popliteal (tibial or common peroneal) nerve is severed, what is the shortest time in which regeneration can take place, and what is the usual and expected time of regeneration? L. H. CHILDS, M.D., Flint, Mich.

ANSWER.—After suspected injury to any peripheral nerve, at least six months should be allowed to elapse in order to determine definitely that the nerve is not going to recover spontaneously. If no recovery occurs in that period of time, one can safely assume that the nerve has been completely severed and not merely crushed.

One should then repair the lacerated nerve surgically. The two ends of the nerve should be freshened by sectioning with a sharp, thin-bladed knife until normal nerve bundles are seen. The two ends should then be united under as high tension as possible with thin silk sutures that pass only through the connective tissue sheath of the nerve. The extremities should then remain in a cast for from six to eight weeks in order to permit firm union to occur. If this is not done and the extremity is allowed free motion, the sutured ends of the nerve are apt to be torn apart.

If a satisfactory suture has been obtained and firm union has resulted, it will be at least two or three months before any results are observed and one should not give up hope for at least six months or a year following such procedure.

The factors that usually cause unsatisfactory results are usually either failure to freshen the ends of the nerves so that good nerve tissue is approximated, or a failure to immobilize the limb so that separation of the two ends occurs even after they have been sutured.

SIGNIFICANCE OF URINALYSIS

To the Editor:—Please read the following urinalysis report and comment on the indications as to kidney function:

Twenty-four hour amount.....	444.0 cc.	specific gravity 1.032
Night, 8 p. m. to 8 p. m.....	192.2 cc.	specific gravity 1.029+
Day, 8 a. m. to 8 a. m.....	251.4 cc.	specific gravity 1.034
8 to 10 a. m.....	44.3 cc.	specific gravity 1.026
10 to 12 a. m.....	29.6 cc.	specific gravity 1.036
12 to 4 p. m.....	74.0 cc.	specific gravity 1.034
4 to 6 p. m.....	44.3 cc.	specific gravity 1.035
6 to 8 p. m.....	59.2 cc.	specific gravity 1.040

There was no albumin or sugar in any of the urine. The night urine showed a considerable number of casts, hyaline and epithelial. The day urine did not show any casts. There was no pus or blood in any specimen. After standing, the night urine showed many oxalate crystals. The 12 o'clock and 6 o'clock specimens showed uric acid crystals. No directions were given as to diet, and the patient ate three ordinary meals but drank very little water (as usual). Is the estimation of the total solids eliminated in the urine, according to Häser's coefficient 2.33, valuable as a test of kidney function? What is the normal for total solids?

H. M. METCALF, M.D., Elyria, Ohio.

ANSWER.—It is rather difficult to make any definite statements with regard to the question pertaining to the urinalysis submitted.

It is apparent that the report is not based on a regular Mosenthal meal. Therefore, the question of concentration or failure to concentrate cannot be answered accurately. In specimens of urine obtained by the Mosenthal technic it is generally found that the day urine is around 1,100 cc. and the night urine about 400 cc. and that the specific gravity of the night urine is higher than that of the day urine. Furthermore, the 8 to 10, 10 to 12 and 6 to 8 specimens of urine, because of the added intake of fluids, generally show a larger amount and a lower specific gravity than the specimens of the other two-hour periods. It can therefore be readily seen that the submitted report cannot be

considered in any way similar to one based on a typical Mosenthal diet. Variations in the specific gravity in this report show a difference of 11 degrees. That in itself suggests an ability of the kidney to concentrate, especially in view of the fact that the specific gravity of 1.029 was found in 192 cc. of urine while the 1.040 specific gravity occurred in 59 cc. There is an apparent fallacy in this statement because the 192 cc. was the night urine while the 59 cc. was only a two-hour day period. Evidently very small amounts of liquids were taken, as is evidenced by the 8 to 10 a. m. urine being only 44 cc. in amount and the 12 to 4 (which in itself indicates the wrong technic because this amount should be separated in two two-hour periods) and the 12 to 4 specimen amounting to only 74 cc. The presence of oxalate and uric acid crystals is of no pathologic significance as they may be found in any concentrated urine. The use of Häser's coefficient in determining the total solids in the urine is inaccurate. The total solids in the urine of the normal individual weighing about 68 Kg. (150 pounds) is 60 Gm.

SOUND PHASES IN BLOOD PRESSURE DETERMINATIONS

To the Editor:—I am writing to you relative to a blood pressure case in which I have discovered something that I have never seen before. April 12, the systolic reading of a man in the late fifties was 200; the diastolic reading, 110. April 11, the sounds were faint and far away but at the same time perfectly audible between the limits stated. April 17, in taking the blood pressure, I inadvertently ran the pressure up to 260 and let it drop down. When it reached 240 there appeared distinct sharp valve sounds, which continued down to 200, when they disappeared and at 180 the same quality of sound appeared as was present on the former reading on April 12 and these continued on down to 118 as before. Repeated readings gave the same results. I do not know, of course, whether this condition could have been discovered at the first examination or not for the pressure was not run up much over 200. The instrument used was a baumanometer. This is the first time I have ever experienced a condition of this kind and I am writing to see whether you can give me any explanation of the peculiar observations.

E. P. HUMMEL, M.D., Sterling, Colo.

ANSWER.—The sounds heard during the so-called second phase on auscultatory determination vary a great deal. Sounds of this phase are normally less sharp and may be inaudible, which probably accounts for the observations in the case in question. It is to be recalled that the sounds heard on taking the blood pressure have been divided into phases, as follows: After the cuff has been inflated until all sounds over the artery are obliterated and the pressure is gradually lowered, a sharp, distinct systolic tapping is heard. This is designated as the first phase. As the pressure continues to be lowered, this is followed by a less sharp sound, more in the nature of a murmur, designated as the second phase, which may be so faint as to be imperceptible. This is followed, as the pressure is further released, by a reappearance of the sharp, distinct sound, possibly not so loud, referred to as the third phase. The fourth phase begins just as this sound becomes more dull, and the fifth phase as the sound disappears altogether.

DIAGNOSIS OF SKIN DISEASES

To the Editor:—I would like advice regarding the treatment of two types of skin diseases. A woman, aged 21, in good general health, has been troubled with acne on the nose and chin for three years. Under proper dietary management together with one-fourth skin unit of unfiltered roentgen therapy weekly, she has made a satisfactory recovery, with the exception of an acne lesion on the side of her nose which was squeezed and picked eighteen months previously. Since that time the place has remained elevated, crusted over and surrounded by an area of erythema. At times it discharges a small amount of pus. Would the use of carbon dioxide snow or fulguration be useful? The second type, of which I have seen several cases, has been in children or young adults. The skin lesions are papules the size of a pin point occurring on the hands, forearms, neck and various places on the body. These papules may occur singly or in groups, and each papule is surrounded by narrow zones of erythema. Itching is a prominent symptom, especially when warm. The patients usually remark that they have been able to squeeze a small amount of serum from the lesions. After being scratched, the lesions resemble those of scabies. Please advise as to diagnosis and treatment. Would you be so kind as to give me the title and name of a book that treats of skin conditions from a cosmetic standpoint? Please omit name. M.D., Ohio.

ANSWER.—Carbon dioxide snow is not indicated in the type of lesion described in the first case. Fulguration or cauterization with the electrocautery, using a fine-pointed electrode, would be more applicable. The description of the second type of case suggests lichen urticatus, the papular urticaria of childhood. This is characterized by a persistent eruption of itching papules with an erythematous halo with the distribution mentioned. At times, firm papulovesicles with an urticarial base may be seen. In the differential diagnosis scabies, prurigo and occasionally dermatitis multiformis would have to be ruled out. The treatment is by means of soothing local applications, correction of the diet, and calcium or ephedrine internally.

Dr. Edmund Saalfeld has written a book entitled "Kosmetik: Ein Leitfaden für Praktische Ärzte," published in Berlin by Julius Springer.

PYURIA IN A CHILD

To the Editor:—Kindly advise further diagnostic procedure or medical treatment if possible for a girl, aged 6, who for the last year has had a large quantity of pus in the urine and for a time had severe pain when voiding. For the last few days the urine has been free from pus and the child has not had pain when voiding, but during the afternoon, according to the mother's description, there have been a number of attacks similar to renal colic. Physical examination is negative except that the child has marked tenderness over the region of the right kidney on pressure, and some over the left kidney. The child had her tonsils removed about seven months ago. Present medication consists of a mixture of methylthionine chloride, benzoic acid, methenamine, phenyl salicylate, hydrobromide cannabis, hyoscyamine and atropine sulphate, large quantities of fluids, and cod liver oil. Kindly omit name. M.D., Pennsylvania.

ANSWER.—The fact that this child has had pyuria for the last year and that she has pain when voiding and also that she has attacks similar to renal colic as well as tenderness over the region of the right kidney on pressure would lead one to think that she has an infection of the urinary tract, with the possibility of obstruction of the ureter, together with a bilateral pyelitis and possibly a pyelonephritis, or a multiple suppurative interstitial nephritis. In all of these conditions one thinks of urinary retention, either in the pelvis of the kidney or in the ureter, or possibly in the bladder itself. The obstruction may be caused by calculi, valves, diverticula or other malformations or strictures. In all chronic cases, from whatever cause, there is danger that irreparable harm will be done to the kidney. Urinary stasis is likely to occur in every case in which malformations or obstruction are present. Stasis almost inevitably leads to infection.

The remedies that have been employed in the treatment of this patient should have made an impression on the progress of the urinary infection. It is a safe rule to have every patient with protracted pyuria who has failed to respond to the usual methods of treatment carefully examined cystoscopically and by means of the x-rays by a competent urologist. In this case it would be well to secure the cooperation of a urologist for directions concerning details in diagnosis and treatment.

BETALACTOSE AND INTESTINAL FLORA OF THE INFANT

To the Editor:—On a sample of B-LAC (Betalactose) marketed by the Battle Creek Food Company, Battle Creek, Mich., the following statement is found: "By the table use of B-Lac in connection with Lacto-Dextrin, avoiding other sugars, the change of the intestinal flora may be expedited and made more complete and permanent." Is the use of this product an insurance against gastric and intestinal disorders in children? Is this established by clinical experience? If so, what is your opinion of the value of this product as compared with lactic acid milk?

R. O. BASSUENER, M.D., Sheboygan, Wis.

ANSWER.—B-Lac is claimed to be betalactose, and is claimed further to have the same action as ordinary lactose (alpha-lactose). There is not sufficient clinical evidence to show that the use of betalactose is insurance against intestinal disorders in children. The use of this sugar can hardly be expected to produce the same results obtained by feeding lactic acid milk in infancy. A change in the intestinal flora is not the chief reason for the feeding of lactic acid milks.

STERILIZATION OF OPERATING ROOM

To the Editor:—Please describe the best and most efficient manner of sterilization of hospital operating rooms following pus cases.

C. L. WILLS, M.D., Parco, Wyo.

ANSWER.—The following method of sterilizing the operating room is used in a large general hospital and has been found satisfactory: Following a suppurating case, all materials are immediately isolated in the operating room, and, if possible, removed to a special side scrub room. This includes all granite ware, rubber covered pillows and pads, gowns, gloves, linen, instruments, and other supplies that may be sterilized or boiled. These may be placed in a special hamper or on a cart and removed entirely from the operating room. The operating table may be gone over with 5 per cent phenol solution in the operating room, and also the straps and rubber covered pillows and

pads unless they are grossly contaminated, in which case they may also be removed to the side room.

The unused ampules of catgut are covered with 20 per cent compound solution of cresol. The operating room floor is cleaned, and a 5 per cent phenol solution is poured over the contaminated area and permitted to stand a few minutes and then a mop is used with this solution, cleaning the floor. The mop should be changed after use in a pus case, while ordinarily it may be left in the pail of 5 per cent phenol solution for one hour.

Before handling any of the contaminated articles used in a suppurating case in a side room, the nurse puts on a long-sleeved gown and gloves. Needles and knives should be placed in a clean pan, covered with 30 per cent compound solution of cresol, and placed on a metal table or, preferably, a marble slab. Care should be taken not to contaminate the outside of the pan. The cover should be removed from linen and garbage cans. A bag for gloves should be placed within easy reach. If it is not convenient to be waited on, one should wash the hands in phenol solution and touch things as little as possible.

The linen is sorted into the linen can and gauze into a pail. A pan of 5 per cent phenol should be set on the table. Pails and pans are washed in the phenol solution and placed with dirty pans for orderlies to scrub.

Without contaminating the faucets, one should get cold water and wash the instruments and gloves well with a brush, working on the slab or table. Then the instruments are placed in trays of 5 per cent phenol solution and the gloves in a bag. The instrument tray and the brush are dropped into the sterilizer; also the bag of gloves, on top of the instrument tray. The water is emptied into a hopper. The gown and gloves are removed without self contamination. (The gown is removed first by pulling the outside of the gown over the gloves. The first glove is removed by handling from the outside and the second glove with the bare hand from the inside of the glove.) The gown is placed in the linen can and the gloves are placed in the sterilizer. The instruments and the gloves are covered with water. The instruments are boiled fifteen minutes, the gloves ten minutes. Linen and gauze are covered with 10 per cent compound solution of cresol.

In case no side room is available for cleaning and isolating contaminated supplies, this work may be done in the operating room. However, the necessary time to cleanse things will interfere with the subsequent use of the operating room; it will also increase the possible contamination. It is desirable to avoid contaminating the operating room as little as possible by using an aspirator or pans to collect all gross pus.

Suppurative cases should come to operation last, though this is not always possible. Just as much care should be used at all times in avoiding spilling pus or unnecessarily contaminating surgical accessories. Cooperation among the surgical staff and nurses is important, no matter what technic for disinfection is utilized.

QUININE ADMINISTRATION DURING PASTEUR TREATMENT

To the Editor:—May I inquire whether I can safely administer quinine in malaria while the patient is taking Pasteur treatment (this is the fifth inoculation).

W. T. PARROTT, M.D., Kinston, N. C.

ANSWER.—There seems to be no contraindication.

SPERMATORRHEA

To the Editor:—Are the spermatozoa found in spermatorrhea capable of fertilizing the ovum? Can the drop or two of urethral discharge which is present after or during erection be called spermatorrhea? What is its origin and does it contain spermatozoa? Kindly omit name and address.

M.D., Iowa.

ANSWER.—True spermatorrhea may be due to an engorgement with semen of the seminal vesicles accompanied by a reduction of the continence of their outlet. Contraction of the seminal vesicles then will lead to an emanation of the surplus of the accumulated semen. Such a periodically recurrent spermatorrhea is on a par with the nocturnal emissions in abstinent healthy men. Or a sudden increase of the intra-abdominal pressure, such as due to forced pressure in defecation, may express semen. In either case, viable spermatozoa may be found in the fluid expressed. Drops of urethral discharge observed during erection do not contain any sperm. This discharge originates in the urethral and prostatic glandular tissue and is known as urethrorrhea ex libidine, the excretion of these organs being increased by the impulses sent down from the sexual centers during sexual excitement.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

NEW HAMPSHIRE: Concord, Sept. 11-12, 1930. Sec., Dr. Charles Duncan, Concord, N. H.

PORTO RICO: San Juan, Sept. 2-13, 1930. Sec., Dr. Diego A. Biascoechea, 3 Allen St., San Juan, Porto Rico.

Pennsylvania January Examination

Mr. C. D. Kock, superintendent of professional education in the Department of Instruction of Pennsylvania, reports the written and practical examination held at Philadelphia, Jan. 7-11, 1930. Of the 46 candidates examined, 45 passed and 1 failed. Four physicians were licensed through reciprocity with other states. The following colleges were represented:

PASSED — College	Year Grad.	Number Licensed
College of Medical Evangelists	(1928) (1929)	2
Howard University School of Medicine	(1928-2)	2
Baltimore Medical College	(1905)	1
Harvard University Medical School	(1927)	1
University of Missouri School of Medicine	(1905)	1
Cornell University Medical College	(1928)	1
University of Buffalo School of Medicine	(1927)	1
Jefferson Medical College	(1924) (1927-3) (1928-5)	9
Temple University School of Medicine	(1928-2)	2
Women's Med. Coll. of Pennsylvania	(1926) (1927) (1928-2)	4
Univ. of Pennsylvania Sch. of Med.	(1926) (1927-3) (1928-8)	12
University of Pittsburgh School of Medicine	(1928)	1
Meharry Medical College	(1928)	1
Medical College of Virginia	(1916) (1928)	2
McGill University Faculty of Medicine	(1907) (1927)	2
Pennsylvania Medical School, Shanghai	(1928)	1
University of Berlin Faculty of Medicine	(1928)	1
Voronej Government University Faculty of Medicine	(1915)	1*

FAILED — College	Year Grad.	Number Failed
Howard University School of Medicine	(1928)	1

LICENSED BY RECIPROCITY — College	Year Grad.	Reciprocity with
Johns Hopkins University School of Medicine	(1926)	Maryland
University of Michigan Medical School	(1911) (1927)	Michigan
University of Michigan Homeopathic Medical School	(1914)	Michigan

* Verification of graduation in process.

Washington January Examination

Mr. Charles Maybury, director of the Department of Licenses of Washington, reports the written examination held at Seattle, Jan. 13-14, 1930. The examination covered 8 subjects and included 80 questions. A grade of not less than 60 per cent in any subject was required to pass. Forty-one candidates were examined, 39 of whom passed and 2 failed. Fourteen physicians were licensed through reciprocity with other states and 3 by the endorsement of credentials. The following colleges were represented:

PASSED — College	Year Grad.	Per Cent
College of Medical Evangelists	(1929)	83
University of Colorado School of Medicine	(1929)	78,* 82*
George Washington University Medical School	(1929)	79*
Northwestern University Medical School	(1929)	80* †
Rush Medical School	(1920) 76, (1926) 84, (1928) 84, (1929)	79
University of Illinois School of Medicine	(1929)	80* †
University of Nebraska School of Medicine	(1929)	79
University of Oregon Medical School	(1929) 80,* 83,* 85,* 85,* 86,* 86*	
University of Virginia Department of Medicine	(1929) 84,* 87*	
University of Manitoba Faculty of Medicine	(1929)	85, 86
Licentiate of Royal College of Physicians and Royal College of Surgeons, Scotland	(1927)	73

FAILED — College	Year Grad.	Per Cent
University of Manitoba Faculty of Medicine	(1926)	78
Licentiate of the Royal College of Phys. and Surgs., Edinburgh	(1893)	66

LICENSED BY RECIPROCITY — College	Year Grad.	Reciprocity with
Yale University School of Medicine	(1921)	Vermont
State University of Iowa College of Medicine	(1926)	California
University of Minnesota Med. School	(1926) (1928) (1929)	Minnesota
St. Louis University School of Med.	(1913) Iowa, (1927)	California
Creighton University School of Medicine	(1928)	Montana
University of Oregon Med. School	(1928) California, (1928)	Oregon
Baylor University College of Medicine	(1928)	California
Univ. of Virginia Dept. of Med.	(1920) Miss., (1924) (1928)	Virginia

ENDORSEMENT OF CREDENTIALS — College	Year Grad.	Endorsement of
Rush Medical College	(1927)	N. B. M. Ex.
Harvard University Medical School	(1920) (1926)	N. B. M. Ex.

* These applicants have not completed their internship and license is being withheld.

† These applicants have finished their medical courses and will receive the M.D. degree on completion of one year's internship in a hospital.

Book Notices

PRINCIPLES AND PRACTICE OF DERMATOLOGY: A TREATISE ON DISEASES OF THE SKIN. Vol. III: The Treatment of Skin Diseases in Detail. By Noxon Toomey, M.D., B.A., F.A.C.P., Dermatologist to the Terminal Railroad. Cloth. Price, $7.50. Pp. 512. St. Louis: Lister Medical Press, 1930.

A reading of this book leads one to the conclusion that there is still room for an authoritative work on the treatment of diseases of the skin. The author has seen fit to enrich dermatologic diction by such expressions as "a humeral reaction of the epidermal tapetum," "anaphylactic proteoclasis," "syndromy," "biotrophy," "etiogenesis"—all of which would be more appropriate in a cross-word puzzle. Dermatologic nomenclature is sufficiently complicated without such substitutions as "sarcoidosis telangiectodes" for Kaposi's sarcoma, "telangiectasia follicularis" for Majocchi's disease," dermatovirosis avitamina" for trench foot, or "tuberculosis mucolytica." In the chapter on insect diseases the author has evidently done much entomological as well as etymological research. A whole page is devoted to culicidosis (mosquito bites), another to clinocorosis (bedbugs), while tyroglyphidosis, reduviidosis and pulecosis are also exhaustively discussed. It is refreshing to learn that dermatitis pratensis is caused by an organism found in horse manure. If the author had confined his remarks to the treatment of everyday dermatologic conditions and would prune off all irrelevant, outmoded and archaic details he would have accomplished his purpose far better than he has. As it is, one has to search for the really essential facts and the occasional sensible, possibly original, therapeutic suggestions that are to be found. In addition to this the absence of illustrations, the frequent grammatical errors, and a poor format add to the shortcomings of the book.

OXFORD MONOGRAPHS ON DIAGNOSIS AND TREATMENT. Edited by Henry A. Christian, M.D., Sc.D., LL.D., Hersey Professor of the Theory and Practice of Physic, Harvard University. Volume VII: The Diagnosis and Treatment of Variations in Blood Pressure and Nephritis. By Herman O. Mosenthal, M.D., Professor of Medicine and Attending Physician, New York Post-Graduate Medical School and Hospital, New York, N. Y. Cloth. Price, $100 per set of 10 volumes. Pp. 184, with 5 illustrations. New York: Oxford University Press, 1929.

OXFORD MONOGRAPHS ON DIAGNOSIS AND TREATMENT. Edited by Henry A. Christian, M.D., Sc.D., LL.D., Hersey Professor of the Theory and Practice of Physic, Harvard University. Volume VIII: The Diagnosis and Treatment of Diseases of the Liver and Biliary Tract. By John Phillips, M.B., Chief of Medical Division, the Cleveland Clinic, Cleveland, Ohio. Cloth. Price, $100 per set of 10 volumes. Pp. 539, with 57 illustrations. New York: Oxford University Press, 1930.

OXFORD MONOGRAPHS ON DIAGNOSIS AND TREATMENT. Edited by Henry A. Christian, M.D., Sc.D., LL.D., Hersey Professor of the Theory and Practice of Physic, Harvard University. Volume IX: The Diagnosis and Treatment of Diseases of the Blood. By Thomas Ordway, M.D., Dean and Associate Professor of Medicine, Albany Medical College, and L. Whittington Gorham, M.D., Clinical Professor of Medicine, Albany Medical College. Cloth. Price, $100 per set of 10 volumes. Pp. 605, with 33 illustrations. New York: Oxford University Press, 1930.

These three volumes of the new Oxford system are fully up to the caliber of those already reviewed. The only adverse criticism of the volume by Mosenthal concerns its brevity, and presumably the loose-leaf system will permit expansion in time. Obviously the price to be paid for this volume, were it to be bought alone, is excessive since it contains only 184 pages with large type and much space devoted to spacing and bibliography. The material on blood pressure, from every possible point of view, is succinct and authoritative.

In contrast to the brevity of the previous volume, the one on the liver contains 539 pages, colored illustrations, numerous half-tones and an exhaustive consideration of every one of the subjects concerned. Dr. Phillips, its author, died in the holocaust of "The Clinic" in Cleveland. The work is a monument to his scientific and clinical ability. It provides adequate consideration of functional tests, of the diseases of the liver, of the bile ducts and of the gallbladder. It is thoroughly up to date, well written and well edited. The therapy is scientific and exceedingly practical.

The book by Ordway and Gorham on the diseases of the blood is perhaps the best one-volume work on its subject available in English. The authors have combed the literature, thoroughly digested it and selected that which was of established value for further promulgation. Moreover, this volume exceeds even the one on the gallbladder and liver in length. It is perhaps a reflection of the way in which scientific medicine is turning more and more to the studies of the blood for the answer to the secrets of many strange disorders. This volume is handsomely illustrated with colored reproductions of various types of blood cells. It reflects thoroughly modern points of view concerning pernicious anemia, secondary anemia, leukemia, agranulocytosic angina, and various forms of purpura and hemophilia. It is perhaps to be regretted that the individual volumes of this system are not made generally available since this one ought to be studied by physicians who have not brought themselves recently up to date in this aspect of medicine. Like the previous volumes, the work is beautifully illustrated and a pleasure to read.

HANDBUCH DER PATHOGENEN MIKROORGANISMEN. Herausgegeben von W. Kolle, R. Kraus und P. Uhlenhuth. Lieferung 35, Band II. Baktericide und bakteriolytische Stoffe des Blutes. Von Prof. Dr. M. Knorr. Hämolytische Serumwirkung (Hämolysine) und Komplementbindung (Cytotoxische Sera). Von Prof. Dr. H. Sachs. Bakteriotropine und Opsonine. Von Prof. Dr. F. Neufeld. Third edition. Paper. Price, 27 marks. Pp. 663-986, with 23 illustrations. Jena: Gustav Fischer, 1929.

Knorr's article on bactericidal and bacteriolytic substances in the blood is closely knit and down to date. Twenty-five pages of bibliography seems a liberal allotment for ninety pages of text. As too commonly in this handbook, proper names (not German) are badly mishandled. Nuttall's name is spelled correctly in the bibliographies but appears with one *l* throughout the text. A. C. "Abbotte" appears on the first page of the bibliography. Sachs, as might be expected, contributes a fine article on hemolytic and cytolytic serums. Neufeld writes clearly on bacteriotropins and opsonins and mercifully spares us the heaping up of references to well forgotten literature. He does, however, give Denys full credit for pioneer observation. Hektoen's name, frequently cited, is invariably misspelled.

THE ADOLESCENT: HIS CONFLICTS AND ESCAPES. By Sidney I. Schwab, M.D., Professor of Clinical Neurology, and Borden S. Veeder, M.D., Professor of Clinical Pediatrics, Washington University Medical School. Cloth. Price, $3. Pp. 365. New York: D. Appleton & Company, 1929.

The first three chapters of the volume, written by Dr. Vidor, present his point of view as a pediatrician on physical growth and development, puberty and sex, school and play. The remaining twenty chapters are the contribution of Dr. Schwab. They consist of thoughtful discussions of almost every imaginable aspect of adolescence. A reader seeking fixed formulas for handling adolescent problems in the manner of a series of prescriptions will be disappointed. Dogmatic definitions as to origins and mechanisms have been avoided. The authors feel that what the adolescent and his environment are mainly in need of is knowledge and sympathetic understanding of one another. The book is an extremely conscientious effort to this end. The freudian psychology and methods are given only partial acceptance. They were not found to be favorable agencies for the investigation of the adolescent conflicts. The book is for careful reading and not for ready reference. It suffers somewhat from too long paragraphs. There is a good index.

VENEREAL DISEASE: ITS PREVENTION, SYMPTOMS AND TREATMENT. By Hugh Wansey Bayly, M.C., Hon. Sec. Society for the Prevention of Venereal Disease. Fourth (American) edition. Cloth. Price, $3.50 net. Pp. 242, with 74 illustrations. Philadelphia: F. A. Davis Company, 1930.

This gives a concise and fairly complete survey of the present status of diagnosis and treatment of syphilitic and gonorrheal infections. A special section is devoted to the propaganda of prophylaxis from the strictly professional, the educational and the legislative points of view. Of great value to the practitioner is the chapter on individual intolerance and complications apt to occur during antisyphilitic treatment. The diagnosis and therapy of gonorrheal infections is presented from a practical standpoint. The closing chapter is devoted to the equipment needed that the physician may base his therapeutic efforts on rational diagnosis.

REFLECTIONS AND OPERATIONS. By Sir John O'Conor, K.B.E., M.A., M.D. Edited by Beatrice and May O'Conor. With a foreword by Herbert J. Paterson, C.B.E., M.C., M.D., Senior Surgeon, London Temperance Hospital. Cloth. Price, 21/— net. Pp. 361, with illustrations. London: Ballière, Tindall & Cox, 1929.

This volume is both interesting and instructive from the surgical point of view. A boy brought up in a simple and frugal Irish home, the only child of a somewhat stern and disciplinary father but gentle and indulgent mother, developed healthily in the wholesome outdoor life and later left home to attend Armagh, then the leading public school in Ireland. Later he attended Trinity College, Dublin, where for four years he rowed or played football for the university, and incidentally studied medicine. Soon after leaving college he was appointed house surgeon to the Royal Free Hospital, Portsmouth. His life work was done in the British Hospital, Buenos Aires, in South America. His choice of location was the outcome of an episode that happened while he was still at the Royal Free Hospital. A young officer of the militia, thrown from his horse at a review, was brought to the hospital unconscious, seriously injured in the head. For weeks he lay unconscious, and trephining was suggested as a last resort. None of the senior surgeons would undertake the operation, under the desperate circumstances. At last the young house surgeon offered his services and performed the operation with brilliant success. The father asked him why, with his talents, he was not in London. O'Conor replied that he had no money and had to take what he could get. The result was the offer of a post as physician in a mining company in South America at a salary of £400 a year, which he accepted, and in November, 1889, he left England for Argentina. After a few months the company for which he was working failed, and he went to Buenos Aires to try his luck. The British Hospital in that city was at the time looking for a resident house surgeon. Through an influential friend he was elected and began his long association with the British Hospital, first as house surgeon and later as the senior medical officer.

Paterson, in his foreword to the volume, states that he writes it with great pleasure as a small tribute of his respect for "the man" and of admiration of the vigor and common sense of his writings.

The "Reflections" embrace all branches of surgery, contain a wealth of clinical experience, and are most interesting reading. His style is simple, direct, forceful. He emphatically urges drainage "wherever there exists the probability of postoperative hemorrhage, or a suspicion of suppuration." He is violently opposed to the use of early massage and early movement in the treatment of fractures, and refutes the oft-quoted statement that, when fractures are plated, the screws loosen after a short time. If this happens, O'Conor says with confidence, it is the fault, not of the screws, but of the surgeon. It is a question of asepsis. As a surgeon, it is clear that he kept abreast of the times, was a keen reader and was mentally alert and discriminating, but with some peculiar notions. For example, he was enthusiastic on the use of alcohol, both in disease and as an article of diet, stating that "teetotalism is a frequent cause of arteriosclerosis" and that "universal total abstention would tend in a comparatively short cycle of time to depopulate the earth." He performed a great work as a surgeon and teacher, bringing surgical progress to South America. It is fascinating reading and his sense of humor has the typical Irish charm and is forceful as well. One example, perhaps, will suffice. In his reflections on gastrojejunostomy he says: "Sluggish operating is unreasonable, particularly in abdominal work, as it not only favors massive collapse of the lung but also tends to produce shock; favors poisoning of the blood by the anesthetic; favors the superventionof sepsis, not to mention that dangerous complication chat, with its accompanying spraying of spittle about the place. . . . Keep the mouth shut and there will not be time for unnecessary conversation." The volume may not contain information that is new, but in reading it a surgeon is stimulated and led to thoughtful contemplation of our methods, in the direction of realizing that we have yet much room for improvement and must be careful not to get in a rut. The thoughts are forcefully presented and read with the ease and interest of a novel. The volume is decidedly worth while.

THE NUTRITION OF HEALTHY AND SICK INFANTS AND CHILDREN FOR PHYSICIANS AND STUDENTS. By E. Nobel, Professor of the University and First Assistant of the Children's Hospital of the University of Vienna, C. Pirquet and R. Wagner, Associate Professor and Second Assistant of the Children's Hospital of the University of Vienna. Authorized translation by Benjamin M. Gasul, B.S., M.D., Consulting Pediatrist at the Municipal Tuberculosis Sanitarium of Chicago. Second edition. Cloth. Price, $3.50 net. Pp. 243 with 35 illustrations. Philadelphia: F. A. Davis Company, 1929.

Fortunately, the artificial feeding of most infants presents but little trouble. The methods now in use for calculating the feeding formula for the baby are simple. The new system of feeding is complicated and not as well adapted for general use. It is, however, of academic interest and the translation of this well known book has made knowledge of this system of feeding more easily available. In addition, the information given concerning the nutritional disorders of infancy as well as the dietary treatment of such conditions as enuresis nocturna, epilepsy, kidney disease and diabetes will be found valuable to both student and practitioner.

DIAGNOSE UND THERAPIE DER HAUTTUBERKULOSE IN DER PRAXIS. Von Professor Dr. Georg Alexander Rost, Direktor der Universitäts-Hautklinik in Freiburg im Breisgau, Professor Dr. Philipp Keller, Oberarzt der Universitäts-Hautklinik in Freiburg im Breisgau, und Privatdozent Dr. Alfred Marchionini, I. Assistent der Universitäts-Hautklinik in Freiburg im Breisgau. Paper. Price, 7.50 marks. Pp. 78, with illustrations. Leipzig: Johann Ambrosius Bart, 1930.

This book, exceptionally well illustrated, although most of the illustrations are taken from moulages, is a practical summary of the present state of knowledge of cutaneous tuberculosis. It is a treatise deserving of a place in the library of every up-to-the-minute general practitioner, internist, tuberculosis specialist and dermatologist. Remarkable is the fact that so great an amount of concrete knowledge has been set forth in so little space. The book is divided into four chapters, the first dealing with statistical studies of the frequency of cutaneous tuberculosis and the relationship of external and internal factors; the second with etiology and immunobiology of tuberculosis of the skin; the third with the clinical varieties of cutaneous tuberculosis, and the fourth with the management of the various types. The appended bibliography includes the majority of the pertinent references to the subject of cutaneous tuberculosis.

THE CARE AND FEEDING OF CHILDREN: A CATECHISM FOR THE USE OF MOTHERS AND CHILDREN'S NURSES. By L. Emmett Holt, Jr., M.D., Associate Pediatrician to the Johns Hopkins Hospital, Baltimore, Md. Fourteenth edition. Cloth. Price, $1.25. Pp. 259. New York: D. Appleton & Company, 1929.

In this revision of a book that has been found useful to a large number of mothers for a period of many years, few changes have been made. New material has been added, but the book retains its original form. The information given is clearly and concisely presented and will serve to answer for the mother many questions that concern her in the care of the well child. The author has been careful not to include material that might alarm the mother, but in all instances the advice given is authentic. The volume deserves a future popularity as great as it has enjoyed in the past.

THE MOST NEARLY PERFECT FOOD: THE STORY OF MILK. By Samuel J. Crumbine, M.D., General Executive, American Child Health Association, and James A. Tobey, Dr.P.H. Cloth. Price, $2.50. Pp. 292, with 10 illustrations. Baltimore: Williams & Wilkins Company, 1929.

Milk is probably the one most popular food, as well it might be; for it supplies a greater abundance of the essential food elements than does any other. Milk is so popular that mothers often make the mistake of giving the child too much of it, so that other necessary foods are excluded from the diet. This

book is devoted to a presentation of all the various phases of milk, and its perusal will lead to an understanding of its value, as well as to the respects in which it is lacking. Included in the book are facts concerning the history, production, practical use, sanitation and dietary functions of milk and its products. Teachers and students of dietetics and home economics as well as the lay reader will find much information of interest in the volume.

Medicolegal

Unlawful Practice of Drugless Healing

(State v. Bradford (Utah), 280 P. 733)

The laws of Utah provide for the issue of licenses to practice medicine, to practice osteopathy and to practice drugless healing, but the defendant, Bradford, had no license to practice in any way. He treated one Barker by prescribing and personally administering a preparation known as "gland oil," by pouring it on the diseased tissue of the patient. An information was filed, charging him with unlawfully practicing the treatment of human ailments without the use of drugs or medicine and without operative surgery. He was convicted, and thereupon appealed to the Supreme Court of Utah. He claimed that the information was faulty in that it charged him with treating a human ailment by means of a preparation known as "gland oil," without having a license to treat human ailments without the use of drugs or medicine and without the use of operative surgery, whereas it should have charged that he practiced medicine without a license and that gland oil was a medicine.

While it was not specifically charged, said the Supreme Court, that "gland oil" is not a drug or medicine, yet from what was charged it is reasonably inferable that that was the case. The information did not proceed on the theory that the defendant was practicing medicine, but that he was practicing a system of treating human ailments without the use of drugs or medicines. On that theory, it was not necessary to state in the information that the defendant was not licensed to practice medicine; it was enough to charge that he was unlicensed to do what he had done. Under the information as drawn, the state could offer evidence that "gland oil" is not a drug or a medicine and that the defendant, although he used "gland oil," practiced a system of treating human ailments without the use of drugs or medicine. On the other hand, the defendant could have offered evidence to show that "gland oil" is a drug or medicine and that he was licensed to practice medicine, which would have been a complete defense.

While the information may not have been a model, said the Supreme Court, it sufficiently stated the acts constituting the offense, in such language and in such manner as to enable the defendant to understand what acts were charged against him. His conviction in the district court, Salt Lake County, was affirmed.

Liability for Unauthorized Operation

(McClees v. Cohen (Md.), 148 Atl. 124)

The appellee, Cohen, sued the appellants, McClees and his employee, Sutherland, because of the alleged wrongful extraction of two good teeth. She testified that she had pain in her upper jaw but nowhere else; that she applied to the "Broadway Dental Parlors"—that being the trade name under which McClees carried on business—to have two "baby roots" removed, one from each side of her upper jaw; that she showed the defendant Sutherland where the supposedly offending roots were, and that he examined her mouth and told her that "these two" must come out immediately; that he administered a local anesthetic and extracted two teeth, without pain; that she did not know that he was working on her lower jaw, and it was not until she reached home that she knew that two lower molar teeth had been extracted instead of the "baby roots" in the upper jaw; and that then she had the roots extracted by another dentist. On the other hand, the defendant Sutherland testified that Mrs. Cohen came into the office suffering from toothache; that she did not attribute it to any particular tooth; that he made the usual examination and found that "in the two lower molar teeth there was inflammation"; that he examined the two "baby roots," but the trouble centered in the lower jaw; and that he extracted the two lower molars. Judgment was given in favor of the patient, and the defendant dentists appealed to the Court of Appeals of Maryland.

In the trial court, the defendants pleaded that the suit was barred by the statute of limitations in that the alleged cause of action did not accrue within one year from the filing of the amended declaration, but the plaintiff's demurrer to this plea was sustained. The defendants' plea could have been entered, said the Court of Appeals, only on the theory that the averments in the declaration charged an assault, the period of limitations in suits based on assaults being one year. The courts, however, are not in accord as to the nature of the action in cases of this kind. In the present case, there is no charge of wilfulness, only one of carelessness, unskilfulness and negligence. The suit must therefore be regarded as one of trespass, case or negligence, and the period of limitations for any one of these actions is three years. The demurrer of the plaintiff to the defendants' plea was therefore properly sustained.

If the patient, said the Court of Appeals, goes to a dentist or a physician and submits herself for diagnosis, with the request, express or implied, that he do what is necessary to give her relief, then he is answerable only for the lack of proper knowledge, skill and care in the treatment or operation. In the absence of evidence to the contrary, it will be presumed that the operation or work performed was carefully and skilfully done. In this case it was a question of fact for the jury whether Mrs. Cohen went to the dentist because she was suffering pain from her teeth generally, and submitted to his judgment, or whether she went to him to have two roots extracted from the upper jaw and he, in violation of her instructions and without her consent, pulled two lower teeth instead. If Mrs. Cohen engaged the defendants to extract certain teeth indicated by her, her consent before extracting any others was necessary. The contradictory statements of dentist and patient as to what was said and done made it proper for the trial court to submit the case to the jury.

The defendants complained that Mrs. Cohen did not come back to see them. The defendant Sutherland, who extracted her teeth, did not suggest that she return, and in the absence of any instructions to return for treatment she would not be chargeable with his omission. There is no evidence that the dentist who subsequently took charge of her case did not treat her properly or that the rights of the defendant were prejudiced by his treatment.

The patient's failure to return for further treatment, after discovering that he is not improving because of the physician's negligent treatment, does not bar recovery for injuries from such improper treatment; and the mere fact that a patient, who believes he has been injured by the negligence of his physician, discharges him or quits his care and employs another is not in itself evidence of contributory negligence.—*48 C. J. 1135.*

The judgment in favor of Mrs. Cohen, the appellee, was affirmed.

Society Proceedings

COMING MEETINGS

Associated Anesthetists of the United States and Canada, Winnipeg, August 28-31. Dr. F. H. McMechan, 770 West Lake Road, Avon Lake, Ohio, Secretary.

Colorado State Medical Society, Pueblo, September 9-11. Mr. H. T. Sethman, Metropolitan Building, Denver, Executive Secretary.

National Medical Association, Indianapolis, August 18-22. Dr. Walter G. Alexander, 136 West Kinney Street, Newark, N. J., Secretary.

Pacific Association of Railway Surgeons, San Diego, Calif., August 22-23. Dr. W. T. Cummins, Southern Pacific General Hospital, San Francisco, Secretary.

Pacific Coast Oto-Ophthalmological Society, Victoria, B. C., Canada, September 4-6. Dr. Walter F. Hoffman, 817 Summit Avenue, Seattle, Secretary.

Utah State Medical Association, Salt Lake City, September 9-11. Dr. M. M. Critchlow, Boston Building, Salt Lake City, Secretary.

Washington State Medical Association, Bellingham, September 9-11. Dr. C. H. Thomson, 1305 Fourth Avenue, Seattle, Secretary.

Wisconsin, State Medical Society of, Milwaukee, September 10-13. Mr. J. G. Crownhart, 119 E. Washington Ave., Madison, Executive Sec'y.

Current Medical Literature

AMERICAN

The Association library lends periodicals to Fellows of the Association and to individual subscribers to THE JOURNAL in continental United States and Canada for a period of three days. Issues of periodicals are kept on file for a period of five years only. Requests for issues of earlier date cannot be filled. Requests should be accompanied by stamps to cover postage (6 cents if one and 12 cents if two periodicals are requested). Periodicals published by the American Medical Association are not available for lending, but may be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (*) are abstracted below.

American Review of Tuberculosis, Baltimore

21: 711-833 (June) 1930

Pulmonary Acoustics: III. Transmission of Vibrations from Percussion Along Ribs. P. F. Metildi, F. W. Bishop, J. J. Morton and R. S. Lyman, Rochester, N. Y.—p. 711.

*Rôle of Leukocytes in Tuberculosis. B. L. Brock, Valley Station, Ky. —p. 745.

*Clinical Value of Monocyte Count in Pulmonary Tuberculosis. L. L. Finner, Naperville, Ill.—p. 764.

Correlation of Leukocyte Interpretation of Medlar with Clinical Findings in Tuberculosis. W. H. Oatway, Jr., Trudeau, N. Y.—p. 786.

System of Reading Roentgen Films. D. McRae, Ninette, Manit.—p. 811.

Trend of Tuberculous Infection. H. E. Kleinschmidt.—p. 818.

Rôle of Leukocytes in Tuberculosis.—Brock found that clinically active tuberculosis and progressive disease respond with septic types of leukocytic pictures. A study of the leukocytes, therefore, would be indicated as a routine only in borderline cases not showing fever or rapid pulse. Again it may be helpful as an index to beginning or increasing exercise in many doubtful cases.

Clinical Value of Monocyte Count in Pulmonary Tuberculosis.—Two hundred and sixteen supravital counts are reported by Finner on 104 patients, 100 of whom had pulmonary tuberculosis. The monocyte count was elevated in 87 per cent of the cases. The remaining 13 per cent consisted, with one exception, of patients with minimal involvement, arrested or nearly arrested cases, and cases with the fibroid type of the disease. In general, the monocyte count was elevated in accordance with the degree of active tuberculous involvement.

Annals of Internal Medicine, Ann Arbor, Mich.

3: 1077-1176 (May) 1930

*Venous Pressure and Vital Capacity. E. V. Allen and M. Hochrein, Leipzig, Germany.—p. 1077.

*Duodenitis, Duodenal Ulcer and Gastric Ulcer. A. C. Nickel, Rochester, Minn.—p. 1084.

*Blood Sugar During Remission in Pernicious Anemia. M. C. Riddle, Ann Arbor, Mich.—p. 1097.

*Diabetic Coma: Eighty-One Cases. B. D. Bowen and I. Hekimian, Buffalo.—p. 1104.

*Arbitrary Period of Disability as Mode of Settlement in Compensation Claims. M. H. Kahn and S. Kahn, New York.—p. 1112.

*Spastic Colon. H. Gauss, Denver.—p. 1128.

*Intravenous Use of Epinephrine in Severe Bronchial Asthma. I. S. Kahn, San Antonio, Texas.—p. 1140.

*Gastric Feeding as New Treatment for Cardiospasm. M. Einhorn, New York.—p. 1143.

Glycosuria and Recovery Following Methyl Salicylate Poisoning. E. L. Sevringhaus and O. O. Meyer, Madison, Wis.—p. 1147.

*Experience with Colloidal Silver Treatment of Cancer. W. S. Stone, G. T. Pack and H. Q. Woodard, New York.—p. 1149.

Cheaper Source of Oxygen. H. L. Arnold, Honolulu, H. I.—p. 1157.

Venous Pressure and Vital Capacity.—According to Allen and Hochrein the venous pressure is increased and the vital capacity decreased in patients with cardiac insufficiency due to any cause. Improvement of the circulatory status is attended by sinking of the venous pressure and increase of the vital capacity. Patients with pulmonary disease and normal cardiac function have only a decreased vital capacity, but, if circulatory failure occurs in the course of pulmonary disease, the venous pressure is increased.

Duodenitis, Duodenal Ulcer and Gastric Ulcer.—A streptococcus, like the one isolated and described by Rosenow, has been consistently isolated by Nickel from various foci of infection and from the surgically removed tissues in cases of duodenitis and of duodenal and gastric ulcer. It has again been demonstrated in the affected tissues of both human beings and of experimentally produced lesions, and it has been shown to have ectotoxins and endotoxins which affect specifically the mucous membrane of the stomach and duodenum. On the basis of these facts, the conclusion that this streptococcus is a causative agent in each of the three diseases studied seems warranted.

Blood Sugar During Remission in Pernicious Anemia.—Riddle asserts that a decrease in the amounts of sugar in the blood of patients with pernicious anemia takes place during early remission. The fall of the fasting blood sugar values appears to be related to a metabolic adjustment accompanying early remission rather than to a direct effect of liver extract on the blood sugar level. The fasting blood sugar values may fall as low as 61 mg. per hundred cubic centimeters of blood during early remission in pernicious anemia. An increase in appetite, caloric intake and body weight is associated with lowered blood sugar values during early remission in pernicious anemia.

Diabetic Coma.—Diabetic coma constitutes an acute metabolic disturbance and, like all accidents, is largely preventable. Bowen and Hekimian state that when treated as an emergency nearly every patient, unless his case is complicated by a serious disease, should recover unharmed and often benefited in that he has learned a valuable lesson. It does not appear that coma can be entirely eradicated, as diabetes often is not diagnosed until coma appears; also a certain percentage of patients, even if they are carefully taught, are normally careless and indifferent, and some patients with severe diabetes, even though they take good care of themselves, may easily be swung into coma by a trivial circumstance. They emphasize the occurrence of abdominal pain as an exceedingly frequent early symptom of impending diabetic coma. Death from uncomplicated coma occurred, as far as could be determined, in three of their sixty-three patients. In all cases there was evidence of circulatory failure, hypotonia, tachycardia and cyanosis. The nature of this is not understood, but it probably is a result of acid intoxication, as in their experience cases that were treated early did not manifest this disturbance. The use of sodium bicarbonate, 40 Gm. or less during the first twenty-four hours, in addition to the insulin, salt solution and water, appears to be harmless and in some cases alkali is decidedly beneficial. Its use appears to shorten the period of acidosis.

Arbitrary Period of Disability as Mode of Settlement in Compensation Claims.—The Kahns assert that the gradation between total and partial disability and between partial disability and full capacity to work is almost always slow. In determining the liability in a large number of cases, it is of great assistance to apply the principle that may be called "an arbitrary period of disability." This must embrace the probable duration of all effects of the alleged accident, particularly in retrospect. Representative types of cases are given to illustrate the application of this mode of settlement. The largest number of these cases comprises underlying progressive disease in which the accident produced temporary aggravation. Particular discussion is given to preexisting pulmonary tuberculosis, chronic heart disease, thrombo-angiitis obliterans and hyperthyroidism. This mode of settlement is advocated as equitable in the types of cases classified.

Spastic Colon.—Spastic colon is a functional disturbance of the colon. The etiology is thought to be an underlying instability of the nervous system. It occurs commonly in women of the so-called neurotic type. The essential mechanism of spastic colon is the hypertonicity. Hypertonicity of the colon may be initiated locally by impulses originating in material lying within the lumen of the colon, or by impulses originating in other parts of the body including the psychic processes, when the impulses are thought to be relayed to the colon through the sympathetic nervous system. The common symptoms of spastic colon are constipation, abdominal consciousness, abdominal pain, flatulence and a tendency toward introspection. Neurotic individuals have partly lost the natural ability to relax. Treatment aims to reduce the irritability of the hypertonicity. The following therapeutic agents, Gauss says, are

available: bed rest; a bland nonirritating diet; intestinal lubrication; local antispasmodics, especially atropine; general sedatives, as bromides or the barbituric acid derivatives; local applications of hydrotherapy or physical therapy to the abdomen, and psychotherapy. The prognosis is guarded.

Intravenous Use of Epinephrine in Severe Bronchial Asthma.—The routine intravenous employment of epinephrine in paroxysms of bronchial asthma is unnecessary, says Kahn, and not recommended. He has had no experience with intravenous doses larger than 3 minims (0.2 cc.).

Gastric Feeding as New Treatment for Cardiospasm.—Gastric feeding is advanced by Einhorn as a new principle in the treatment of cardiospasm. The apparatus used consists of a special bucket, the lower part three times heavier than the upper part. The treatment is usually given while the patient remains in bed, but, occasionally, may be ambulatory. The patient is fed through a tube for a period of ten days, the diet including a variety of foods in liquid form. The intake of food should be frequent and in small quantities, not exceeding one and a half glasses every few hours. Sharp or spicy foods, as well as extreme hot or cold foods, should be avoided.

Experience with Colloidal Silver Treatment of Cancer.—Five cases of inoperable cancer were selected by Stone et al. for treatment by colloidal silver. Of these, three were mammary carcinomas, one was gastric carcinoma, and one was carcinoma of the cervix uteri. The intravenous injection of colloidal silver solution provoked an immediate but temporary systematic reaction, consisting of chill, fever, nausea and vomiting. This constitutional reaction limited the amount of metallic colloid injected at a single dose to 30 mg. The introduction of the colloidal silver induced no discernible changes in the composition of the blood and urine. These observations contradicted the reports of other investigators that colloidal silver induced a hypoglycemia when administered intravenously. Microscopic study of one of these carcinomas removed at necropsy showed no histologic evidence of any influence of colloidal silver on the carcinoma cells or tumor stroma. There were two instances of temporary subjective improvement which were probably due to the psychic influence of the intravenous medication; one patient gained in weight. There was never any actual decrease in size of any of the tumor masses. The progress of the disease appeared to be unaltered. It is regarded as probable that the occasional beneficial result obtained in cancer therapy by the use of colloids of heavy metals, notably lead, is not due to their biologic action as foreign colloids per se, because a similar colloid, namely, silver, produces no demonstrable effect on the growth of cancer in man.

Annals of Medical History, New York

2: 249-350 (May) 1930

Medical Friendships, Clubs and Societies. H. Rolleston, Cambridge, England.—p. 249.
Alphonse François Marie Guérin. J. C. Wilson, Philadelphia.—p. 267.
Medicine in China, Old and New. E. H. Hume, New York.—p. 272.
Dr. George Fordyce and His Times. W. B. Howell, Montreal, Canada.—p. 281.
Corvisart, His Life and Works B. B. Beeson, Chicago.—p. 297.
Public Relations of Medical Profession in Great Britain and United States: 1600-1870. R. H. Shryock, Durham, N. C.—p. 308.

Archives of Internal Medicine, Chicago

45: 827-1011 (June) 1930

*Pain. D. C. Sutton and H. C. Lueth, Chicago.—p. 827.
Bundle Branch Block. A. S. Hyman, New York, and A. E. Parsonnet, Newark, N. J.—p. 868.
*Metabolism and Treatment of Osteomalacia. S. L. Gargill, D. R. Gilligan and H. L. Blumgart, Boston.—p. 879.
*Lymphosarcoma. C. Davison, New York, and J. J. Michaels, Detroit.—p. 908.
*Spontaneous Recovery from Perforation of Peptic Ulcer into Free Abdominal Cavity. H. A. Singer, Chicago.—p. 926.
*Thrombo-Angiitis Obliterans (Buerger): IV. Reduction of Blood Volume. S. Silbert, A. L. Kornzweig and M. Friedlander, New York.—p. 948.
*Cardiac Output in Heart Disease: II. Effect of Exercise on Circulation in Patients with Chronic Rheumatic Valvular Disease, Subacute Rheumatic Fever and Complete Heart Block. H. L. Alt and G. L. Walker, Boston, and W. C. Smith, Atlanta, Ga.—p. 958.
*Significance of Axis Deviation in Human Electrocardiogram. S. H. Proger, Atlanta, Ga., and D. Davis, Boston.—p. 974.
*Diffusible Calcium and Proteins of Blood Serum in Jaundice. L. Gunther, Los Angeles, and D. M. Greenberg, Berkeley, Calif.—p. 983.
Metabolism of Obesity: VI. Influence of Fatigue on Mechanical Efficiency. C. C. Wang, S. Strouse and E. Smith, Chicago.—p. 1004.

Pain.—The results of an experimental study are summarized by Sutton and Lueth as follows: Acute mechanical distention of the aortic arch, ascending aorta, aortic ring and the cavity of the left ventricle does not produce pain in the dog. Acute mechanical distention of the parts of the aorta and heart named produces paroxysmal dyspnea. Acute mechanical distention of the ascending aorta and aortic arch at times produces either a rise in blood pressure or no definite change. Acute mechanical distention of the aortic ring of the left ventricle invariably produces a fall in pressure even when both vagi are severed. Mechanical and electrical stimulation of the annulus of Vieussens after all vagal strands are severed invariably produces an increase in blood pressure. According to the experimental evidence given in this paper, the only mechanism for the production of cardiac pain is that of lessened blood flow to the myocardium.

Metabolism and Treatment of Osteomalacia.—In a case of advanced osteomalacia occurring in a young American woman reported by Gargill et al., the endogenous calcium, phosphorus and nitrogen metabolism were studied under rigidly controlled conditions, and the effect of various therapeutic agents was observed over a period of more than one year. Whereas an average normal person receiving a diet low in calcium, low in phosphorus and low in vitamin has a negative calcium balance of 6.7 mg. per kilogram, the patient studied showed an average loss of 45 mg. of calcium per kilogram of body weight. The negative calcium balance persisted even when the patient received an amount of calcium greatly in excess of the normal metabolic requirements. Previous to the time the studies were commenced, the patient's condition had become progressively worse in spite of her taking 30 cc. of fresh, unrefined cod liver oil on alternate days for six months before admission. The first therapeutic agent utilized during the study was 50 cc. daily of a physiologically tested preparation of cod liver oil. This failed to cause an appreciable storage of calcium, although the amount given was much greater than that found effective in osteomalacia by other investigators. When, however, a cod liver oil concentrate was fed so that the patient received large amounts of vitamins A and D, improvement in the patient's condition became evident. This became even more conspicuous when ultraviolet irradiation was added. Considerable amounts of calcium and phosphorus were deposited in the bones, as shown by the results of metabolism studies, as well as by the increased density of the bones according to the roentgenograms. The tenderness of the bones and the anemia disappeared, and the patient showed striking clinical improvement under this treatment. The storage of calcium and phosphorus was greatly increased by the addition of large amounts of these elements in the form of calcium lactate and disodium acid phosphate. When a preponderance of calcium was added to the diet, phosphorus, as well as calcium, was deposited in increased amounts. The converse occurred when a preponderance of phosphorus was added to the diet. Maximum retention occurred, however, when the increased amounts of the two elements were fed simultaneously. Observations on the phosphorus metabolism indicate that the calcium retained was deposited as bone. The clinical, metabolic, blood and roentgen observations, together with the striking retention of calcium and phosphorus when ultraviolet radiation and vitamins A and D were given, lead the authors to believe that osteomalacia as manifested by this patient is a form of adult rickets.

Lymphosarcoma.—Twenty-six patients with lymphosarcoma were investigated by Davison and Michaels. Seven of them presented neurologic signs and symptoms. Four showed signs of compression of the spinal cord. In none of the cases was there a direct invasion of the brain or the spinal cord. The symptoms were due chiefly to compression from invasion of the skull, vertebrae or meninges. Invasion of the cranial cavity took place only when the cervical lymph nodes were involved and involved early. High voltage roentgen and radium

therapy, while not a cure for the disease, causes some relief from the symptoms during the first few applications. The relief is due chiefly to the recession of the tumor, which causes compression on the respective organs. When these enlargements fail to respond to treatment, improvement in the symptoms may not be expected. For a time, however, these patients benefit a great deal by high voltage roentgen or radium therapy, and at present these are the best forms of palliative treatment.

Spontaneous Recovery from Perforation of Peptic Ulcer Into Free Abdominal Cavity.—Within a period of eighteen months, forty cases of spontaneous recovery from perforated ulcer have been collected by Singer from the medical and surgical wards in the Cook County Hospital. The general belief that practically all cases of perforated peptic ulcer pursue a typical, progressive course is not borne out by a review of the case reports. Following the symptoms of onset, the clinical manifestations in many cases rapidly subside, and complete recovery ensues within from one to several days. These are "formes frustes" cases in which limited leakage occurs because the hole becomes spontaneously closed shortly after rupture takes place. The universal statement that perforation of a peptic ulcer into the free abdominal cavity is readily recognized is also at variance with the impression gained by reading the details of the cases reported by Singer. In typical cases, the diagnosis is more or less obvious. However, in the mild and abortive types and in cases seen after the symptoms of onset have subsided, an incorrect diagnosis is generally made in a majority of instances. It is estimated that in a large series of cases of perforated ulcer in which surgical closure is not performed at least 50 per cent of the patients will recover. The observation that spontaneous recovery from perforated peptic ulcer is a common occurrence is offered as a statement of fact which may aid in diagnosis and serve to elucidate a number of obscure clinical problems and statistical paradoxes. No conclusions are drawn in the article regarding the bearing which this observation might have on the present methods of treatment for perforated ulcer. No statement is made which contradicts the current belief that in general perforated ulcer constitutes a surgical emergency.

Reduction of Blood Volume in Thrombo-Angiitis Obliterans.—A study made by Silbert et al. of blood volume by the dye method in eighty-seven cases of thrombo-angiitis obliterans, nine cases of atherosclerosis and twenty-two normal persons was made. An average reduction of 21 per cent in blood volume was found in sixty-nine typical cases of thrombo-angiitis obliterans. This fact suggests that a concentration of the blood is usually present in this disease.

Cardiac Output in Heart Disease.—Four normal subjects and seven patients with compensated heart disease, including chronic rheumatic valvular disease, subacute rheumatic fever, "chronic myocarditis"(?) and complete heart block, were subjected by Alt et al. to two moderate, standardized grades of work on the Krogh bicycle ergometer. Measurements were made of the cardiac output, pulse rate and blood pressure during exercise. The response of the cardiac output in the patients with heart disease was not essentially different from the response in the normal subjects. The lowest values occurred in a youth in good physical training with mild valvular disease who performed the work with ease, and in a young adult with complete heart block who performed the work with difficulty. Four of the patients with heart disease experienced fatigue and dyspnea during exercise. Fatigue was usually more marked than dyspnea. The first patient had advanced aortic and mitral disease with marked cardiac enlargement. The pulse pressure, which was abnormally high at rest, increased relatively as in the normal subjects during exercise. The second patient, who had subacute rheumatic fever, had an abnormal increase in the pulse rate, while the stroke volume did not rise above its basal level. In the third, a young woman with complete heart block, the pulse rate doubled during exercise. This was effected both by an increase in the ventricular rate and by the occurrence of extrasystoles. The fourth patient, a young man with complete heart block, had a slight decrease in the pulse rate during exercise. This was accompanied by a greatly increased stroke volume, higher than any previously reported in the literature. Both patients with complete heart block had an unusual rise in the pulse pressure during work. The effect of training is indicated by the more efficient response seen in a patient with mild valvular disease who has been accustomed to strenuous exercise, and in several of the other subjects after they have performed repeated periods of work on the bicycle.

Significance of Axis Deviation in Human Electrocardiogram.—The present status of the clinical significance of axis deviation in the human electrocardiogram is reviewed by Proger and Davis. The electrical axes, orthodiagrams and clinical observations are compared in 334 cases. Clinical conditions generally associated with left ventricular preponderance tend to produce left axis deviation; those associated with right ventricular preponderance more constantly produce right deviation. This occurs more regularly in enlarged hearts than in hearts of normal size. Sixty-six of sixty-eight normal hearts on clinical and orthodiagraphic examination presented angles varying from 0 to 80 degrees. Zero to 80 degrees is therefore proposed as the limits of normal with the possibility in infrequent cases of limits of —10 to 90 degrees.

Diffusible Calcium and Proteins of Blood Serum in Jaundice.—Analytic studies made by Gunther and Greenberg of the blood of jaundiced patients show that there is no deficiency in the diffusible calcium of the blood serum, regardless of the degree of jaundice between icteric indexes of 17.5 to 200, and regardless of the absence or presence of abnormal bleeding phenomena. The serum albumin may be low in jaundice. The nondiffusible fraction of the serum calcium may be low as a result of the fall in the serum albumin. The value of the diffusible calcium of the blood serum is a more accurate measure of the physiologically available calcium than the value of either the nondiffusible or the total calcium. Factors other than the amount of available calcium, as measured by the concentration of the diffusible calcium, must be sought to explain the abnormal bleeding phenomena seen in jaundiced patients.

Archives of Surgery, Chicago

20: 885-1059 (June) 1930

Autogenous Free Cartilage Transplanted into Joints. M. Harbin and A. R. Moritz, Cleveland.—p. 885.
*Cause of Death in Uncomplicated High Intestinal Obstruction. J. C. White and F. A. Fender, Boston.—p. 897.
Tumors of Orbit. I. Cohn, New Orleans.—p. 906.
*Traumatic Pneumocephalus. C. W. Rand, Los Angeles.—p. 935.
*Experimental Shock. A. Blalock, Nashville, Tenn.—p. 959.
*Biliary and Hepatic Factors in Peptic Ulcers. B. N. Berg and J. W. Jobling, New York.—p. 997.
*Diaphragmatic Adhesions. J. R. Head, Chicago.—p. 1016.
*Operation for Treatment of Spasmodic Torticollis. W. E. Dandy, Baltimore.—p. 1021.
Forty-First Report of Progress in Orthopedic Surgery. P. D. Wilson, L. T. Brown, M. N. Smith-Petersen, J. G. Kuhns and E. F. Cave, Boston; R. K. Ghormley, Rochester, Minn.; M. S. Danforth, Providence, R. I.; G. Perkins, London, England; A. Van Dessel, Louvain, Belgium, and C. H. Bucholz, Halle, Germany.—p. 1033.

Cause of Death in Uncomplicated High Intestinal Obstruction.—A dog with a complete high intestinal obstruction was kept alive and in good condition for a month by White and Fender by preventing the loss of its digestive secretions, these being immediately reinjected into the lower unobstructed bowel. They are convinced that it is extremely unlikely that any potent toxin formed in the obstructed intestine can be absorbed by the mucous membrane as long as its blood supply is maintained; otherwise, life would have been shortened rather than prolonged by the reinjection of the obstructed secretions. The theory that the beneficial effect of salt solution is due to the neutralization of toxin by the chloride radical seems illogical. This animal received no salt from outside sources and became considerably dechlorinated during the prolonged obstruction, owing to a small, unavoidable daily loss. The dechlorination of the tissues corresponded to that of the blood. As the nonprotein nitrogen and nitrogen output in the urine remained normal, there is no evidence that tissue protein was destroyed by toxin. The authors believe that death in the uncomplicated high obstructions is due mainly to loss of salt and water, possibly also to other substances, in the gastro-

duodenal secretions. When inorganic electrolytes are lost rapidly and are not replaced, it becomes impossible for the organism to retain its normal water content. This leads to fatal changes in the physiochemical equilibrium of the blood and tissues.

Traumatic Pneumocephalus. — Eight cases of traumatic pneumocephalus are reported by Rand. Three patients of this group died of meningitis, two of them succumbing from pneumococcus and one from streptococcus meningitis. Only one of these three patients was operated on, the operation being performed after meningitis had become general; in this instance, the tear in the dura was not found. Operation was performed in five cases with recovery; in each instance, the opening in the dura was found and closed, either by suture or by muscle graft. Rand insists that any case of fracture of the skull communicating with an accessory nasal sinus, particularly the frontal, should be closely watched for the possible development of pneumocephalus. This complication may appear at once or more often several weeks after the injury. The presence of cerebrospinal rhinorrhea should increase precautionary measures. The patient should be warned against sneezing, coughing or any action that may intensify the air pressure in the accessory nasal sinuses. If pneumocephalus is demonstrated, whether the air is present in the frontal lobe, lateral ventricles or both, its removal should be attempted at once, together with closure of the dural rent. Signs of meningitis are often present, even in the absence of infecting organisms; consequently, they should not necessarily deter an attempt to correct the pneumocephalus. It may even be justifiable to proceed in certain cases in which infecting organisms have been demonstrated in the fluid. The prognosis in cases of pneumocephalus is probably better if operative rather than expectant treatment is used. Success depends largely on early recognition and prompt intervention.

Experimental Shock.—The experiments made by Blalock offer no evidence that trauma to an extremity produces a toxin that causes a general dilatation of capillaries with an increase in capillary permeability and a general loss of fluid from the blood stream. Nor do they lend support to the other theories, such as fat embolism, acidosis, acapnia, suprarenal hyperactivity and hypo-activity and vasomotor exhaustion. There was a sufficient loss of blood volume into the traumatized area in all these experiments on dogs anesthetized by barbital to account for the reduction in the blood pressure. The time interval which elapsed between the initiation of the trauma and the reduction of the blood pressure to a shock level probably was not sufficiently great in these experiments to rule out the effects of decomposition products which are slow in their actions. Definite conclusions as to the mechanism of the production of shock in man are not made.

Biliary and Hepatic Factors in Peptic Ulcers. — The investigation made by Berg and Jobling suggests the possibility that alterations in the function of the liver and in the secretion of bile may be important factors in the etiology of peptic ulcers. Although gross or microscopic changes in the biliary tract are found in only a small percentage of cases of ulcer in man, nevertheless functional disturbances that are not recognized by present inadequate methods may exist. The periods of remission and exacerbation that characterize so-called chronic ulcers may coincide with intermittent functional alterations in the stomach and duodenum in response to changes in the liver and biliary system. If peptic ulcers are associated with deficiency of the liver in man, the administration of liver may be of therapeutic value. A clinical study is in progress to determine the efficacy of this form of treatment. The results obtained from these preliminary studies suggest that treatment with liver does have a beneficial effect, but the studies have not been carried on for a sufficient length of time to permit forming definite conclusions.

Diaphragmatic Adhesions. — Adhesions between the diaphragm and the wall of the chest restrict markedly the respiration of the homolateral lung. In the presence of such adhesions, induction of paralysis of the hemidiaphragm may so increase the costal movements on that side that the vital capacity is increased rather than decreased. It is suggested by Head that the presence of such adhesions favors the healing of tuberculous lesions in the lungs and should be considered as a contraindication to the operation of phrenico-exeresis.

Operation for Treatment of Spasmodic Torticollis.—An operative procedure is presented by Dandy for treatment in spasmodic torticollis. The first, second and third sensory and motor roots on both sides are sectioned intradurally, and the spinal accessory nerves are divided peripherally, small incisions in the neck being used. Eight patients have been operated on by this method with the following results: (*a*) Five appear to be cured; (*b*) two are greatly improved but not cured; (*c*) one died of pneumonia (not contracted at the time of operation) three weeks after operation.

Arkansas M. Soc. Journal, Little Rock

26: 239-256 (May) 1930

Acrodynia: Case. A. A. Gilbert, Fayetteville.—p. 239.
Fractures of Pelvis. W. R. Brooksher, Jr., Fort Smith.—p. 242.
Toxins and Antitoxins of Erysipelas, Scarlet Fever and Diphtheria. G. A. Hebert, Hot Springs National Park.—p. 244.

Colorado Medicine, Denver

27: 173-216 (June) 1930

Cataract Problems. M. Black, Boulder.—p. 177.
Multiple Myeloma. C. T. Burnett and W. C. Johnson, Boulder.—p. 178.
*Subacute Combined Sclerosis. E. Delehanty, Boulder.—p. 182.
*Mercurochrome as Antiseptic During Labor. H. B. Henderson, Boulder.—p. 184.
Diagnosis and Treatment of Bronchiectasis with Lipiodol by Passive Method. J. C. Gant and J. L. Harvey, Boulder.—p. 185.
Schilling's Differential Count. W. C. Black, Boulder.—p. 189.
Unusual Type of Otitis Media and Mastoiditis. H. I. Laff, Boulder.—p. 191.
Congenital Renal Ectopia with Crossed Dystopia. H. H. Wear, Boulder.—p. 194.
*Inflammation of Placenta and Membranes and Clinical Significance. F. Summerill and V. E. Campbell, Boulder.—p. 197.
Primary Sarcoma of Spinal Column: Case. H. W. Wilcox, Boulder.—p. 200.
Acidosis of Ether Anesthesia. W. B. Draper, Boulder.—p. 202.
Pyonephrosis Hydro-Ureter with Symptoms of Purpura Hemorrhagica. R. G. Smith, Boulder.—p. 205.

Subacute Combined Sclerosis.—In Delehanty's case the differential blood count excluded a pernicious anemia. The color index never was above 0.7; anisocytosis, poikilocytes or normoblasts were absent. The family history was negative except that one brother died of pernicious anemia. Death was due to exhaustion. The necropsy diagnosis was subacute posterior lateral sclerosis of the spinal cord and sclerotic plaques of the dura and arachnoid.

Mercurochrome-220 Soluble as Antiseptic During Labor.—The technic used by Henderson was that of Mayes without the spraying of the thighs. The maternal morbidity of 100 consecutive cases in which mercurochrome was not used was 42 per cent higher than the maternal morbidity in 100 consecutive cases in which mercurochrome was used.

Inflammation of Placenta and Membranes and Clinical Significance.—Routine examination made by Summerill and Campbell of the placenta and membranes in 325 consecutive obstetric cases showed evidence of acute inflammation affecting the placenta, membranes and cord in fifty-five cases (16.9 per cent). The incidence of inflammation was higher in cases with prolonged second stage of labor and in cases with complications requiring operative procedures. There was no maternal mortality and no recognizable effect on the fetal and infant mortality. A greater incidence of leukocytosis and fever in the cases with inflammation pointed to the existence of infection. In this series the infections were apparently mild and did not result in sepsis in any case.

Endocrinology, Los Angeles

14: 77-144 (March-April) 1930

Ovarian Hormone Effects in Ovariectomized Monkeys. D. C. Robertson, W. P. Maddux and E. Allen, Columbia, Mo.—p. 77.
Anterior Lobe Pituitary Substance and Basal Respiratory Metabolism. M. O. Lee and J. Gagnon, Boston.—p. 89.
Rôle of Suprarenal Medulla in Maintenance of Blood Pressure. S. Vincent and J. H. Thompson, London.—p. 93.
Estrogenic Substances: I. Apparatus and Methods for Preparation of Stable Extracts from Natural Sources. J. C. Janney and B. S. Walker, Boston.—p. 101.
Metabolic Study of Desiccated Suprarenal Medication in Man. R. G. Hoskins and F. H. Sleeper, Worcester, Mass.—p. 109.

Georgia Medical Association Journal, Atlanta

19: 175-217 (May) 1930

Man of Medicine. W. R. Dancy, Savannah.—p. 175.
Fraternal Fellowship. G. Y. Moore, Cuthbert.—p. 194.
Acute Gonorrhea in Women. W. P. Jordan, Columbus.—p. 196.
Barrenness Apparently Due to Azoospermia. D. Y. Sage, Atlanta.—p. 200.
Rôle of Prostatic. W. L. Bazemore, Macon.—p. 201.
Serologic Neurosyphilis Versus Clinical Neurosyphilis. N. P. Walker, Milledgeville.—p. 203.

Illinois Medical Journal, Oak Park

57: 293-364 (May) 1930

Maternal Statistics. C. E. Mongan, Somerville, Mass.—p. 323.
Surgical Obstetrics. C. E. Paddock, Chicago.—p. 327.
Treatment of Chronic Suppurative Maxillary Sinusitis. O. J. Nothenberg, Chicago.—p. 332.
Radiotherapy in Dermatology. R. H. Stevens, Detroit.—p. 336.
Closed Aseptic and Quick Method of Gastro-Intestinal Anastomosis: Use of Partipilo Clamp. A. V. Partipilo, L. D. Moorhead and W. J. Pickett, Chicago.—p. 345.
Appendicitis in Children Under Fifteen Years of Age. R. E. Cummings, Chicago.—p. 348.
Determination of Pathogenic Tonsil. M. R. Guttman, Chicago.—p. 352.
Prophylaxis and Early Treatment of Laryngeal Tuberculosis. I. I. Muskat, Chicago.—p. 355.

Indiana State M. Assn. Journal, Fort Wayne

23: 205-250 (May 15) 1930

Behavior Disorders After Encephalitis. E. D. Bond, Philadelphia.—p. 205.
Distribution of Diphtheria in Indiana. T. B. Rice, Indianapolis.—p. 208.
Sympathetic Ophthalmia. E. M. Shanklin, Hammond.—p. 214.
Rupture of Pancreas without External Signs of Injury. W. D. Gatch, Indianapolis.—p. 217.
Sinusitis, Chronic Polypoid, Atrophic Type—Multiplicity of Coexisting Diseases: Case. J. W. Carmack, Indianapolis.—p. 218.

Journal of Experimental Medicine, Baltimore

51: 831-989 (June 1) 1930

Biologic Studies of Tubercle Bacillus: I. Instability of Organism—Microbic Dissociation. S. A. Petroff and W. Steenken, Jr., Trudeau, N. Y.—p. 831.
*Mexican Typhus Fever. H. Zinsser and A. P. Batchelder, Boston.—p. 847.
Centrifuge Experiments with Virus of Vaccinia. F. F. Tang, Shanghai, China.—p. 859.
Total Water and Chloride Content of Dehydrated Rats. T. G. H. Drake, C. F. McKhann and J. L. Gamble, Boston.—p. 867.
Inflammation: III. Fixation of Metal in Inflamed Areas. V. Menkin, Philadelphia.—p. 879.
Accumulation of Antibodies in Central Nervous System. J. Fruend, Philadelphia.—p. 889.
Cultivation and Classification of Bacteroides, Symbionts or Rikettsiae of Blattella Germanica. R. W. Glaser, Princeton, N. J.—p. 903.
Contribution to Epidemiology of Specific Infectious Cystitis and Pyelonephritis of Cows. F. S. Jones and R. B. Little, Princeton, N. J.—p. 909.
Effect of Cathode Rays on Certain Bacteria. R. W. G. Wyckoff and T. M. Rivers, New York.—p. 921.
Rise in Temperature Preceding Appearance of Symptoms in Experimental Poliomyelitis. S. D. Kramer, K. H. Hendrie and W. L. Aycock, Burlington, Vt.—p. 933.
*Abnormalities Produced in Central Nervous System by Electrical Injuries. O. R. Langworthy, Baltimore.—p. 943.
*Infectious Myxomatosis of Rabbits. T. M. Rivers, New York.—p. 965.

Mexican Typhus Fever.—Studies made by Zinsser and Batchelder confirm the view that the small Giemsa-staining bodies observed by Mooser in the tunica of Mexican typhus guinea-pigs represent the virus of the disease.

Abnormalities Produced in Central Nervous System by Electrical Injuries.—The alternating and continuous circuits used by Langworthy produced different types of lesions in the central nervous system. Hemorrhages were common after alternating current shocks and few hemorrhages were observed in the continuous circuit group. With both types of circuits at 1,000 and 500 volts potential, severe abnormalities in the nerve cells were observed. These were more marked in the continuous circuit group. Injury to the cerebral and cerebellar cortices occurred on the dorsal surface close to the head electrode. Small cavities were produced, particularly in the cerebral cortex, as the result of the circuit contact. With the continuous and alternating circuits at 110 and 220 volts potential, less severe changes were observed in the nerve cells although hemorrhages were common in the alternating circuit group. It must be assumed in these cases that death was due to respiratory block rather than to actual death of the cells.

Infectious Myxomatosis of Rabbits.—According to Rivers, the virus of infectious myxomatosis of rabbits (Sanarelli) induces multiple lesions in the skin, lymph glands, tunica vaginalis, epididymis, testicle, spleen and lungs. Growth and destruction of cells in the epidermis overlying the myxomatous masses leads to the formation of vesicles. Cytoplasmic inclusions are found in affected epidermal cells. Occasionally, similar inclusions are seen in other involved epithelial cells. The nature of the inclusions is an open question. In the myxomatous masses situated in the subcutaneous and other tissues, evidences of alteration and growth of certain cells are observed.

Journal of Infectious Diseases, Chicago

46: 351-434 (May) 1930

Cultural and Serologic Reactions of Lactobacilli from Mouth. B. Howitt, San Francisco.—p. 351.
Lesions Produced in Rabbits by Lactobacillus Cultures. B. Howitt and M. Van Meter, San Francisco.—p. 368.
*Epidemic of Colds, Bronchitis and Pneumonia Due to Type V Pneumococci. M. C. Schroder and G. Cooper, New York.—p. 384.
Respiratory Catalysts of Disease-Producing Bacteria. A. Locke and E. R. Main, Chicago.—p. 393.
*Behavior of Escherichia Coli and Specific Bacteriophage in Urine. F. C. Frisbee and W. J. MacNeal, New York.—p. 405.
Syphilitic Antigen Derived from Blood Serum. R. L. Kahn, A. M. Malloy and M. Nishio, Ann Arbor, Mich.—p. 413.
Relation Between Concentration of Lipoids in Antigen and Sensitiveness in Precipitation Reaction with Syphilitic Serum Globulins. M. Nishio, Ann Arbor, Mich.—p. 420.
Brucella Abortus Agglutinins in Porcine Blood. R. A. Boak and C. M. Carpenter, Ithaca, New York.—p. 425.
*Brucella Abortus in Certified Milk. D. E. Hasley, Detroit.—p. 430.

Epidemic of Colds, Bronchitis and Pneumonia Due to Type V Pneumococci.—An epidemic of pneumonia, bronchitis and common colds in a children's home is reported by Schroder and Cooper. The more interesting observations were: (1) the explosive nature of the epidemic and the short space of time in which it reached its height, fifty-five patients being admitted to the hospital on the seventh day after the first patients were admitted; (2) the extreme infectivity of the organism; (3) the prostration and cyanosis which accompanied the apparently milder cases, and (4) the definite isolation of an infecting organism commonly classified as belonging to group IV of the pneumococcus group, but which in the research laboratory has been definitely determined as a member of type V.

Behavior of Escherichia Coli and Specific Bacteriophage in Urine.—The treatment of patients with bacterial infection by the use of a lytic agent which has been shown to be active against the specific infectious microbe is not always an unqualified success, even though the bacteriophage has been shown to be powerfully active against the bacterial strain in test tube experiments. The eradication of the bacterial parasite from a particular part of the human body may be influenced by numerous attending circumstances the nature and effect of which are imperfectly understood. Frisbee and MacNeal have made a study of the interrelation of a susceptible strain of *Escherichia coli* and its actively lytic bacteriophage when grown in human urine under different conditions of hydrogen ion concentration and admixture of various substances, such as formaldehyde, acriflavine hydrochloride and possibly other remedial agents with and without free access of air. They assert that the colon bacillus grows more actively in human urine when the latter is slightly acid in reaction rather than alkaline. The bacteriophage actively lytic for the colon bacillus is most effective against this organism in urine culture when the reaction of the latter is acid, with a p_H of from 5.6 to 6.3. The bacteriophage is not unfavorably influenced by exclusion of air from the cultures in urine. The urinary antiseptics formaldehyde and acriflavine are distinctly unfavorable to the action of the bacteriophage in concentrations too weak to exert an appreciable effect on the growth of the colon bacillus in urine.

Brucella Abortus in Certified Milk.—The results of Hasley's investigation show that it is possible to detect *B. abortus* in market certified milk by plating methods. *B. abortus* was grown from 10 of 230 samples; the 10 positive samples were obtained from 3 of 5 dairies. The highest number of organisms found was 8 per cubic centimeter of milk; the average for the 10 positive samples was 2 per cubic centimeter.

Journal of Nervous & Mental Disease, New York

71: 481-688 (May) 1930

*Epilepsy: Control of Convulsive Seizures by Means of Dehydration. T. Fay, Philadelphia.—p. 481.
Importance of Opposition of Spirit and Life for Psychology of Personality. H. Prinzhorn, Frankfort-on-Main, Germany.—p. 634.
Psychopathic Hospitals of Japan. J. L. McCartney, New York.—p. 640.
Precipitating Mental Conflicts in Schizophrenia. G. E. Gardner, Waverly, Mass.—p. 645.

Control of Convulsive Seizures in Epilepsy by Means of Dehydration.—Fay is convinced that the predisposing factor concerned with a major convulsive seizure is due to a hydration state, however induced, whether local or diffuse, and that proper control of this factor, when possible, gives rise to an attack-free existence which may continue as long as the patient's water metabolism or fluid balances remain within the limits of proper compensation.

Kansas Medical Society Journal, Topeka

31: 157-196 (May) 1930

Congenital Heart Disease: Case of Tetralogy of Fallot. D. C. Peete, Kansas City.—p. 157.
Generalized Tuberculous Lymphadenitis. S. D. Katz, Kansas City.—p. 160.
Acute Infective Laryngotrachitis (Nonmembranous Croup). L. B. Spake, Kansas City.—p. 162.
Indwelling Ureteral Catheter in Renal Infection. C. K. Smith, Kansas City.—p. 164.
Richter's Hernia with Intestinal Obstruction. T. G. Orr, Kansas City.—p. 165.
Tularemia: Three Cases. C. M. Downs, A. M. Fortney and E. R. Edmiston, Kansas City.—p. 167.
Important Signs and Symptoms in Diagnosis of Brain Abscess. O. J. Dixon, Kansas City.—p. 170.
Scientific Jackasses. P. Woodard, Kansas City.—p. 172.
Repair of Complete Perineal Laceration. R. R. Wilson, Kansas City.—p. 173.
Chorea in Children. H. L. Dwyer, Kansas City.—p. 175.
Safeguards in Spinal Anesthesia. A. M. Wenzel, Kansas City.—p. 176.
Causes of Diarrhea. A. S. Welch, Kansas City.—p. 181.

Laryngoscope, St. Louis

40: 325-396 (May) 1930

Brain Abscess from Standpoint of Ophthalmologist. W. L. Benedict, Rochester, Minn.—p. 325.
Brain Abscess from Standpoint of Otolaryngologist. W. P. Eagleton, Newark, N. J.—p. 336.
Brain Abscess from Standpoint of Brain Surgeon. W. J. Mixter, Boston.—p. 357.
Brain Abscess: Methods of Drainage. H. P. Cahill, Boston,—p. 365.
Nasal Sinus Disease in Small Children. L. W. Dean, St. Louis.—p. 371.

Medicine, Baltimore

9: 119-255 (May) 1930

Cholesterol Metabolism in Health and Anemia. G. L. Muller, Boston.—p. 119.
Cardiac Output of Man. E. K. Marshall, Jr., Baltimore.—p. 175.
Erythrocyte in Man. M. M. Wintrobe, New Orleans.—p. 195.

Michigan State M. Soc. Journal, Grand Rapids

29: 411-482 (June) 1930

Importance of Body Type and Constitution in Infancy and Childhood. B. Veeder, St. Louis.—p. 411.
Tuberculosis Today as Compared to Twenty-Five Years Ago. W. R. Vis, Grand Rapids.—p. 417.
*Therapeutic Value of Copper in Anemia. H. V. Dwyer, Detroit.—p. 420.
Mental Hygiene in Community. L. A. Schwartz, Detroit.—p. 426.
*Summer Camp for Diabetic Children. L. F. C. Wendt and F. B. Peck, Detroit.—p. 430.
Suboccipital Meningocele Masking Symptoms of Brain Abscess: Case. F. Schreiber, Detroit.—p. 433.
*Agranulocytic Angina Successfully Treated with Immunotransfusion: Case. R. L. Fisher, Detroit.—p. 435.
Spinal Anesthesia. W. L. Hackett and D. Solkin, Detroit.—p. 438.
Value of Visual Field Studies. P. Heath, Detroit.—p. 442.
Recent Compensation Developments. L. H. Childs, Flint.—p. 446.
Psychiatry in Industry and Commerce. I. M. Altshuler, Detroit.—p. 451.

Therapeutic Value of Copper in Anemia.—A small series of cases in which copper has been used clinically in the various types of anemia is presented by Dwyer. It would seem that copper may prove to be of some value in the treatment of anemia in selected types of cases.

Summer Camp for Diabetic Children.—Wendt and Peck are convinced that a diabetic camp for children is desirous and beneficial. Thirteen of thirty-one children were able to have their diets increased, and four of them had their insulin doses reduced 10 units. In all, 5,781 units of insulin was given. Many of these children would have had no vacation except for this camp. Since it is impossible for parents to take their children away while on a diabetic regimen, the camp also gives the mother a much needed rest, with the assurance that her child will have even better care than she will be able to give it at home. The child is enabled to associate with other children without the pity that is usually bestowed, and the educational value of the camp is great. Diets and insulin dosage must be varied according to the amount of work done, and no permanent diet can be strictly adhered to but must be varied from day to day. The expense of such a camp is not prohibitive. It amounts to about $20 a week for each child. A physician and a trained nurse should be in constant attendance. Every large community should have a camp of this character, as it supplies a need to a special class of unfortunate children. If the expense for help could be eliminated by having these services donated, either wholly or in part, the expense of such a camp could be materially reduced and the camp continued for a longer period. The same help can take care of a much larger camp provided some of the work is done by its members. The training received at camp teaches the children to occupy their minds with other matters besides food, and strengthens their will power. Children who were docile and quiet became alert and active. They frolicked and played as they had never done formerly. The association with other children seemed to develop their mental faculties; it taught them to do things other children were doing.

Agranulocytic Angina Successfully Treated with Immunotransfusion.—The marked improvement made by Fisher's patient after the employment of an immunotransfusion is regarded as being suggestive of the infectious origin of the disease and of the presence in recovered patients' serum of immune bodies.

New England Journal of Medicine, Boston

202: 891-936 (May 8) 1930

Development of Clinical Concept of Arterial Hypertension. S. Weiss, Boston.—p. 891.
Irradiation of Primary Cancer of Breast. F. W. O'Brien, Boston.—p. 897.
Hematuria. C. S. Swan, Boston.—p. 901.
Progress in Obstetrics. J. Rock, Boston.—p. 907.

202: 937-982 (May 15) 1930

Vaccination. J. P. Leake, Washington, D. C.—p. 937.
Early Psychic Invalidism. J. Kasanin, Boston.—p. 942.
Relation of Clinics and Health Associations to Medicial Profession. R. I. Lee, Boston.—p. 945.
Relation of Clinics and Health Associations to Medical Profession. D. L. Richardson, Providence, R. I.—p. 947.
Relation of Clinics and Health Associations to Medical Profession. G. H. Bigelow, Boston.—p. 949.
Id. F. R. Ober, Boston,—p. 953.
Springfield Medical School? J. M. Birnie, Springfield, Mass.—p. 956.
Alfred Nobel: Medical Incidents and Nitroglycerin. W. P. Coues, Brookline, Mass.—p. 958.

202: 983-1034 (May 22) 1930

Prevention of Heart Disease. W. H. Robey, Boston.—p. 983.
Diagnosis and Treatment of Pneumonia. F. G. Blake, New Haven, Conn.—p. 991.
Incarceration of Meckel's Diverticulum in Femoral Hernia. R. H. Sweet, Boston.—p. 997.
*Relation of Clinics and Health Associations to Medical Profession. G. Blumer, New Haven, Conn.—p. 999.
Mitral Disease of W. H. Hudson, 1841-1922. W. P. Coues, Brookline, Mass.—p. 1010.

Relation of Clinics and Health Associations to Medical Profession.—Blumer says that it should be quite apparent to any one who has been practicing medicine for more than a generation that a gradual change in the status of the physician is coming about and that it is associated with certain factors outside and within the profession. There is a gradual tendency to socialize medicine in one way or another. The percentage of medical men who are engaged in some form of work in which they are employed by others at a fixed remuneration as contrasted with the percentage who are earning their living by independent practice is constantly becoming larger. This

question is intimately associated with the increased cost to the public of medical care. Indeed, most of the pressure for the socialization of medicine comes from the public and is opposed, if not resented, by many of the profession. Blumer feels that the socialization of medicine would be a calamity, that it would remove the spur of competition, that it would tend toward routine and the bureaucratic frame of mind, and that it would discourage original research. The practice of medicine has always been a strongly individualistic matter and always must be on account of the powerful psychic element that enters into it.

Philippine Islands M. Assn. Journal, Manila

10: 149-180 (April) 1930

Procidentia Uteri and Surgical Treatment. F. Calderon and C. D. Franco.—p. 149.
Causes of Errors in Clinical Diagnosis on Patients in Medical Department, Philippine General Hospital, Who Died in 1927 and 1928. P. Ignacio.—p. 153.
Umbilical Fistula: Case. C. Camomot.—p. 157.
Measurements of Height and Weight of Igorots. N. Cordero.—p. 159.
Use of Insulin in Second-Degree Burn Developing Hyperglycemia and Glycosuria. R. L. Teopaco.—p. 162.

Southwestern Medicine, Phoenix, Ariz.

14: 153-204 (April) 1930

Anomalies of Kidney Pelvis and Upper Ureter. W. G. Shultz, Tucson, Ariz.—p. 153.
Solitary Cysts of Kidney. W. R. Jamieson, El Paso, Texas.—p. 156.
Nephritis. H. P. Mills, Phoenix.—p. 160.
Pernicious Anemia: Case. J. J. Gorman, El Paso, Texas.—p. 185.

14: 205-256 (May) 1930

Our Duty as Doctors to Our Patients. J. M. Greer, Phoenix.—p. 205.
Treatment of Diabetes by General Practitioner. R. S. Flinn, Prescott. —p. 210.
Resorcinol Flocculation Test in Pulmonary Tuberculosis in Comparison with Red Blood Cell Sedimentation Test in Group of Patients at Fort Stanton Sanatorium, New Mexico. G. H. Faget, Fort Stanton, N. M.—p. 217.
Who Should Be Called a Pathologist? W. W. Waite, El Paso, Texas. —p. 220.
Recent Advances in Interpretation of Physical Signs in Pulmonary Tuberculosis. L. H. Fales, Livermore, Calif.—p. 221.
Scarlet Fever: Case. F. O. Barrett and A. P. Black, El Paso, Texas. —p. 225.
Ligneous Phlegmon of Reclus: Case. E. P. Palmer, Phoenix.—p. 227.
Acute Gonorrhea. G. Shields, Phoenix.—p. 229.

Texas State Journal of Medicine, Fort Worth

26: 1-64 (May) 1930

Endothelioma of Lung Complicated by Tuberculosis. A. H. Braden, Houston.—p. 8.
Embolism of Arteries of Extremities. F. C. Beall, Fort Worth.—p. 9.
Headache from Cranial Injury: Means of Relief. E. R. Carpenter, Dallas.—p. 11.
Problems of Acute Appendiceal Surgery. J. W. Burns, Cuero.—p. 14.
Hysterectomy: Technic and Indication for Inclusion of Ovaries in Operation. H. A. Phillips, San Antonio.—p. 16.
First Aid for Railroad Employees: Advantages and Disadvantages. R. W. Knox, Houston.—p. 18.
Observations on Treating Fractures of Long Bones. J. W. Goode, San Antonio.—p. 21.
Visit to Cancer Clinics of Europe. O. L. Norsworthy, San Antonio. —p. 23.
Physiotherapy. F. E. Dye, Houston.—p. 26.
Otitis and Nutritional Disorders in Infancy. A. N. Champion, San Antonio.—p. 31.
Agglutination Test as Aid in Differentiating Certain Febrile Diseases. M. Owen, Fort Worth.—p. 34.
Chronic Appendicitis. T. Miller, Dallas.—p. 36.
Use and Abuse of Ephedrine. I. S. Kahn, San Antonio.—p. 40.
Epilepsy. T. B. Bass, Abilene.—p. 41.
What Is Insanity? J. Greenwood, Houston.—p. 42.

Wisconsin Medical Journal, Madison

29: 249-312 (May) 1930

Alkalosis. W. J. Tucker, Ashland.—p. 249.
Prostatic Obstruction. H. L. Kretschmer, Chicago.—p. 254.
Seminal Vesiculitis and Prostatitis of Disuse. H. E. Kasten, Beloit. —p. 259.
Recent Diagnostic Aids in Gynecology. H. O. Jones, Chicago.—p. 263.
Clinical Pneumonia: Treatment with Potassium Permanganate. H. Oerting, St. Paul.—p. 266.
Principles of Roentgenotherapy: V. Roentgen Laboratory. General Treatment Technic. E. A. Pohle, Madison.—p. 268.
Diagnostic Problem. L. M. Warfield, Milwaukee.—p. 273.
Prostatic Obstruction: Two Cases. G. H. Ewell, Madison.—p. 274.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

1: 987-1032 (May 31) 1930

*Asthma: Results of Treatment. D. M. Lyon and R. M. Murray-Lyon. —p. 987.
Goiter Survey in Albino Rats. R. McCarrison.—p. 989.
Coke-Men and By-Products Workers: Complaints and Maladies. T. Oliver.—p. 992.
*Baths as Artificial Climates: Treatment of Rheumatism in Winter. R. F. Fox.—p. 994.
*Blood Serum Test of General Paralysis. K. O. Newman.—p. 997.
Etiology of Certain Lesions at Hip Joint. W. R. Thrower.—p. 999.
Sclerema Neonatorum. W. Goldie.—p. 1000.
Anterior Poliomyelitis Simulating Landry's Paralysis. J. MacLeod.— p. 1001.
Prophylaxis Against Dysentery by Oral Vaccines. R. Munro.—p. 1001.

Results of Treatment in Asthma.—The results of treatment in 291 cases of asthma are reported by Lyon and Murray-Lyon, in which 65 per cent of the patients have been benefited and 12.4 per cent have died. The authors conclude: No single scheme of treatment can be laid down for all cases; each patient must be treated individually. The most successful forms of therapy appear to be elimination when applicable, and vaccine treatment when respiratory infections complicate the asthma. Cases that react to a single protein are usually favorable, but the occurrence of multiple sensitivity is of little importance in relation to treatment. Among many factors less easy to assess, change of residence and general hygienic measures have contributed to the patients' improvement. The results of operations on the nose or throat are disappointing; such treatment should be recommended only to relieve definite local symptoms. Cases arising in the first five years of life are less successful than those beginning later. This may depend on the unfavorable factor of a positive heredity. Asthmatic symptoms commencing after middle life are also apt to be less amenable to treatment. The duration of the disease before effective treatment is undertaken is of the greatest importance; the longer the delay, the less satisfactory the result, although certain cases of long standing have benefited considerably under adequate treatment.

Baths as Artificial Climates: Treatment of Rheumatism in Winter.—Fox lays down what appear to him to be the essential features and conditions of success of a center for physical treatment of rheumatic diseases in a northern climate. In the first place, the center must have for its nucleus a bath clinic, with its proper therapeutic elements—heat, moisture, mechanical stimulation and time. The bath and its surroundings will actually represent a climate in miniature, and it will operate by counteracting climatic influences in those who are injuriously affected by them. To serve this purpose a large warmed building will be required, with a temperature approaching 70 F. in all its parts. The main feature will be the central pool or pools of moving water with its complement of gases, at the selected degree or degrees of heat. In association with these, departments will be provided for treatment by mud, with the proper mud kitchen, by vapor at various temperatures, or by thermal brine. Light and artificial sunshine will certainly have a place, as well as a judicious selection of local and accessory physical treatment. There will also be ample accommodation for manipulations, movements, frictions and switching, and couches for packs and prolonged and quiet resting. An artificial climate will pervade the place, and winter gardens with a subtropical temperature, refreshment rooms, library, games and recreations, and a gymnasium, may properly be included in the scheme. Last, but not least, fountains of soft drinking water, hot and cold, will be provided in all departments for treatment, as the free use of water internally is of great assistance to the external treatment of rheumatism. The great majority of rheumatic persons, in both the early and the later stages of the disease, and many others who suffer from chill, might well be recommended to spend from two to three hours a day in a medical establishment of this description. Men and women after the day's work would take with advantage a couple of hours for treatment, rest and recreation

at such a bath clinic. For all serious cases, especially of arthritis, warmed hostels should be available in close proximity.

Blood Serum Test of Dementia Paralytica. — By a process of sensitization, which is described in detail, Newman has produced a gold-sol which, for a period long enough to enable the experimenter to examine a considerable number of serums, gives distinct and easily distinguishable color reactions in normal and paretic serum (or, probably, in the serum of any patient whose cerebrospinal fluid shows a paretic curve). He has also found that 1 drop from several cubic centimeters of glycerin which has been poured into a test tube containing a small amount of solidified serum and allowed to stand at room temperature for one minute or longer gives an instantaneous characteristic reaction with sensitized gold-sol. The serum before solidification must be shaken for a few seconds with decolorizing charcoal. The solidification is effected by heating to 80 C.; boiling is permissible, but it distinctly weakens the reaction. Newman prepares the gold-sol according to Eicke's method, but with one or two slight modifications. He always distils the water over potassium permanganate in a Jena glass still. Further, having added 1.5 cc. of a 5 per cent solution of potassium permanganate drop by drop at intervals of about one second to the 500 cc. of distilled water (containing 0.5 cc. of 10 per cent gold chloride and 2.5 cc. of a 5 per cent solution of dextrose), beginning when its temperature has reached 90 C., he continues with a 1 per cent solution of potassium carbonate, gradually increasing the intervals between the drops from about two to five seconds as the color change approaches. As soon as the color change occurs, he rapidly removes the flame. The gold-sol is now ready for immediate use and can be cooled in plugged 100 cc. Erlenmeyer flasks under a cold water tap.

Edinburgh Medical Journal

37: 325-384 (June) 1930

*Diagnostic Investigation of Abdomen. O. Toutkowsky.—p. 325.
*Qualitative Determination of Potency of Liver Extract: Possible Mode of Action. J. P. M'Gowan.—p. 330.
Syphilis Congenita Vera. D. M. Greig.—p. 349.
Dundee Doctors in Sixteenth Century. R. C. Buist.—p. 357.

Diagnostic Investigation of Abdomen. — Toutkowsky proposes, for the investigation of the organs situated at the upper part of the abdomen, a method of palpation which gives frequently a fulcrum, from which one is able to localize a disease. This method, which may provoke some pain or tenderness, consists in a special palpation of the lower ribs and the rib edge. This is a methodical, rather energetic and sharp tap on the ribs and intercostal muscles. As an accessory method, this palpation of the ribs sometimes gives useful information in cases of inflammation of the pericardium and of the pleura. Tenderness in the rib region caused by the pressure has been known for a long time as a sign of abscess in the lung or under the diaphragm.

Qualitative Determination of Potency of Liver Extract.—M'Gowan stresses the point that in cases of pernicious anemia it is not so much an actual deficiency of liver agent in the patient's liver that sets the disease going but rather an excess of production by the marrow, which is organically deranged, of a condition that requires liver agent for its control, which liver agent the liver even in health is unable to supply. In other words, the onus of originating the disease rests with the marrow, not with the liver.

Lancet, London

1: 1109-1162 (May 24) 1930

Autonomic Nervous System. W. B. Cannon.—p. 1109.
*Causation of Eclampsia. G. W. Theobald.—p. 1115.
*Fatal Neuroparalytic Accident of Antirabies Treatment. G. Stuart and K. S. Krikorian.—p. 1123.
Concurrent Herpes Zoster and Varicella: Case. J. N. Cumings.—p. 1125.
*Changes in Blood Platelets After Operations and Injuries. B. Willinsky. —p. 1126.

Causation of Eclampsia.—Theobald asserts that eclampsia is caused by toxins absorbed from the intestinal canal, which, owing to a breakdown in the defenses of the body, are not detoxicated. The success of the various expectant methods of treatment, which are all based on that in use in the Rotunda Hospital and first described by Tweedy in 1896, as well as the brilliant results obtained by antenatal care, testify to the truth of this. Theobald suggests that a deficiency of ionized calcium in the blood is the cause of the breakdown of the defenses of the body.

Fatal Neuroparalytic Accident of Antirabies Treatment.—Stuart and Krikorian report a fatal case of acute ascending (Landry's) paralysis which followed the treatment of a case of rabies. The vaccine employed is a 2 per cent emulsion of fixed virus brain killed by the combined action over twenty-four hours of heat at 37 C. and of 1 per cent phenol, and diluted to half with physiologic solution of sodium chloride prior to use. Treatment consisted of the daily administration, over fourteen consecutive days, of 5 cc. of killed carbolized virus, and the paralysis, which occured six hours after the fourteenth injection, followed the introduction of 0.7 Gm. of nerve substance.

Changes in Blood Platelets After Operations and Injuries.—Surgical operations of any but the most trivial kind are generally followed by an increase in the number of platelets in the circulating blood; the same thing happens in most cases of normal childbirth and is marked after cesarean section. The rise in the platelet count is associated with a diminution in the clotting time of the blood and it is suggested that it has a good deal to do with the occurrence of postoperative thrombosis. The platelets usually reach their maximum at about the tenth day, the time at which thrombosis is most likely to occur. There is no change in the count after anesthesia, simple hemorrhage or stopping in bed, and the common feature which excites the reaction seems to be tissue injury. After trying a number of methods, Willinsky came to the conclusion that Howel Evans' technic was the most reliable and practical. Paraffined surfaces are used and the blood is diluted with 2 per cent sodium citrate in 0.29 per cent sodium chloride stained with cresyl blue, and the ratio between platelets and number of cells is determined in a hemocytometer chamber. In the majority of cases studied by him, a rise of some degree occurred. They included a radical cure of a femoral hernia; an extensive comminuted fracture of the femur, without an external wound or any operative intervention; colostomy; fractured tibia; salpingectomy; prostatectomy; ablation of the breast; hemorrhoidectomy; fractured humerus; compound fracture of the tibia and the fibula, and compound fracture of the femur. A fractured femur, an adenoma of the breast, a gastro-enterostomy, an umbilical hernia, a prostatectomy (second stage), and an injection for varicose veins showed no change. In five instances there was a fall. Several cases showed a slight fall on the first day after operation which does not seem to have been previously noticed. The bone cases showed a rise after manipulation and, taken together, entirely support the view that the increase of platelets is caused by tissue injury, presumably by the absorption of the products of autolysis into the circulation.

Practitioner, London

124: 601-704 (June) 1930

Treatment of Thyroid Insufficiency. G. R. Murray.—p. 601.
Some Affections of Gallbladder. A. E. M. Woolf.—p. 613.
Circulatory Disorders of Middle Life Treated by Waters and Baths. R. F. Fox.—p. 628.
Indications for Treatment at Bath. F. G. Thomson.—p. 638.
Sciatic Pain: Diagnosis and Treatment. C. W. Buckley.—p. 653.
Diagnosis of Gastric Disorders. J. R. Collins.—p. 664.
Abdominal Injuries. D. M. Sutherland.—p. 674.
Diagnosis of Pancreatic Diseases. J. N. Leitch.—p. 682.
*Effect of Bread on Constipation. J. C. Mottram.—p. 691.

Effect of Bread on Constipation.—Mottram discusses the value of white, wholemeal and germ bread in the treatment of constipation. Germ bread contains less starch and more fat and proteins than the other two breads. A man was chosen who was the subject of mild constipation and had been accustomed to take magnesium sulphate daily. This treatment was discontinued. His diet was in no way altered and consisted of of the ordinary diet of the middle classes, except that the kind of bread taken was controlled; over some periods of time white bread or toast was alone eaten, over other periods germ bread

or toast. A little bread was eaten with every meal. The eating of germ bread with every meal cured the patient's constipation. While white bread was being eaten there were seven days without evacuation of the bowels in twenty-five days, under germ bread no days in twenty-two. White bread gave twenty evacuations in twenty-five days, germ twenty-six evacuations in twenty-two days. The high vitamin B content of germ bread probably accounts for the difference.

Annales de Médecine, Paris

27: 1-104 (Jan.) 1930

*Primary Meningitis and Meningo-Encephalitis in Mumps. R. J. Weissenbach, G. Basch and M. Basch.—p. 5.
*Latent Infectious Meningitis in Nervous Uremias of Nephritis and Acute Icterus. P. Savy and H. Thiers.—p. 39.
Disorders of Sympathetic Nervous System in Rheumatic Fever. A. van Bogaert and J. Mage.—p. 54.
Chvostek's Sign. J. Pavel, J. Claudian and D. Cornateano.—p. 86.

Primary Meningitis and Meningo-Encephalitis in Mumps.—On the basis of their personal experience (two characteristic cases are described) and a review of the literature, Weissenbach et al. point to the symptoms of acute and subacute meningitis that have been noted several days before parotitis develops. According to the clinical histories described by the various authors, they recognize several distinct types in which the diagnosis can be made by elimination of meningococcus meningitis or other diseases, such as syphilis or tuberculosis, in which meningitis can arise as a complication. The affinity of the virus of mumps for the nervous tissue has heretofore been disregarded or even denied. However, according to the authors this double tropism of the virus of parotitis points to a certain relationship to the virus of hydrophobia and epidemic encephalitis. On the other hand, its mild and transitional inflammatory character distinguishes it from these infections. By the resulting immunity it may be related to such diseases as herpes zoster or acute anterior poliomyelitis.

Latent Infectious Meningitis in Nervous Uremias of Nephritis and Acute Icterus.—The clinical histories of two patients, which had been previously reported by Savy and Thiers, as well as three observations obtained from the literature, lead the authors to draw attention to a latent pneumococcic infection of the meninges which could be determined solely by examination of the cerebrospinal fluid. In these patients, symptoms of nervous uremia had occurred during acute or chronic nephritis or acute icterus.

Bordeaux Chirurgical

No. **1:** 1-88 (April) 1930

*Late Results of Abdominal Hysterectomy (Wertheim) in Cancer of Cervix Uteri. Bégouin.—p. 1.
*Value of Arteriography of Extremities. Charbonnel and Massé.—p. 5.
External Bronchial Fistulas as Complication of Surgical Treatment of Hydatid Cyst of Lung. F. Papin.—p. 23.

Late Results of Abdominal Hysterectomy (Wertheim) in Cancer of Cervix Uteri.—Bégouin directs attention to the comparatively few reports of late results following Wertheim's operation. His personal experience in seventy-five patients who had been operated on from ten to twenty-five years previously showed that the proportion of cures was 43.48 per cent, which conforms to reports from the literature. Recurrence after five years is an exception and after ten years a rarity. In compiling the statistics, patients who had died during the operation or of some subsequently incurred disease have been included. Cancer, according to the author's conception, is a localized disease and in that sense of the word can be cured. It should be impressed as such on the patient's mind.

Value of Arteriography of Extremities.—Charbonnel and Massé discuss the results obtained with sodium iodide injections into the blood vessels for roentgen examination in gangrene and ulceration of the lower limbs. They describe the clinical histories of twenty-one patients, nine of whom were personal ones, and present several excellent roentgenograms which demonstrate the diffusion of the fluid into the collateral blood vessels. However, this method is contraindicated in moist gangrene in which the path of elimination is obstructed. It is especially dangerous in infected gangrene with involvement of the lymph nodes in patients with diabetes. However, with dry gangrene in diabetes, if it does not limit any other indicated treatment, examination with sodium iodide injections may be done and is of assistance in determining the height of amputation or whether such radical intervention is necessary.

Bulletins et Mém. de la Soc. Nat. de Chirurgie, Paris

56: 443-490 (April 5) 1930. Partial Index

Cystic Dyshepatoma (Nonparasitic Cysts of Liver). P. Mathieu.—p. 444.
Diffuse Peritonitis After Attempted Abortion: Two Cases. G. Lœwy.—p. 447.
Chronic Coxalgia: Successful Treatment by Extra-Articular Arthrodesis and Subtrochanterian Osteotomy. D. Férey.—p. 452.
*Bone Formation in Cystostomy Scar. Rolland and Stagnaro.—p. 454.
*Peritoneal Syndromes at Onset of and During Rheumatic Fever. G. Worms.—p. 457.

Bone Formation in Cystostomy Scar.—Rolland and Stagnaro report this occurrence in their patient, aged 68, who had entered the hospital for urinary disturbances. Examination disclosed several strictures and at another examination one week later the presence of a calculus that had not been revealed by roentgen examination was noted. Cystostomy was done three days later and two calculi were removed. Cicatrization had been rapid at first but a fistula persisted for more than three months. In order to repair this condition a part of the scar, which contained a small hard object, was removed. Microscopic examination after decalcification disclosed that it consisted peripherally of fibrous tissue, but no blood vessels or signs of inflammation were noted. In the center was cartilaginous tissue surrounded by osteoblasts. There was no evidence of a malignant condition. The patient recovered rapidly after this second intervention without further complications arising.

Peritoneal Syndromes at Onset of and During Course of Rheumatic Fever.—The clinical histories of three patients in whom this occurred are reported by Worms. All three were young persons in whom the diagnosis of acute appendicitis was made following severe abdominal pain on the right side coincident with vomiting and an increase of temperature. Operation disclosed the normal condition of the appendix and intestine. However, several days later pain in the joints was noted; in one patient it was accompanied by a heart murmur. Medication with sodium salicylate relieved the condition.

Journal de Chirurgie, Paris

35: 321-480 (March) 1930

*Toxemia in Intestinal Obstruction: Experimental and Clinical Study. A. Gosset, L. Binet and D. Petit-Dutaillis.—p. 321.

Toxemia in Intestinal Obstruction: Experimental and Clinical Study.—Gosset et al. review the literature and recall briefly their previous experiments. The toxic fluid obtained above the site of obstruction was found to be of the nature of a peptamine. The most characteristic of the clinical histories from twenty-seven patients obtained from the literature and the authors' personal experiences are described; in them the value of treatment by intravenous injections of sodium chloride solution is clearly demonstrated. According to the authors the prognosis following operation may be considerably modified by the treatment. It is indicated first of all in obstruction of the small intestine but should also be used in obstruction of the large intestine. The type of obstruction is important, as the most favorable results are obtained with a type resembling experimental obstruction. This is the case in postoperative obstruction caused by adhesions; also in obstructions caused by biliary calculi and in some cases of paralysis. However, there is little hope of success in obstructions due to torsion or strangulation of an intestinal loop or in symptomatic obstruction due to thrombosis of a mesenteric blood vessel. In all these instances in which the vitality of the intestine has been reduced over a large area, the intoxication is of a more complex nature and there is a greater danger of peritonitis. So far no injuries have resulted from the administration of hypertonic solutions of sodium chloride. In some patients a slight

edema was noted in the legs, but it rapidly disappeared; in one patient a herpetiform eruption was noted, which disappeared after cessation of the injections. It is important to control the chloride content of the blood serum in persons with kidney disease and in aged persons. In persons with acute intestinal obstruction, injections of hypertonic sodium chloride solution constitute the heroic method of medicinal treatment.

Presse Médicale, Paris

38: 449-464 (April 2) 1930

Carotid Nerve: Anatomic and Physiologic Study. A. Hovelacque, J. Maes, L. Binet and R. Gayet.—p. 449.
*Pathogenesis of Arthritis Deformans. P. Moulonguet and G. Mihailesco. —p. 453.
Tabetic Arthropathies and Syphilis of Regional Lymph Nodes: Two Cases. M. Faure-Beaulieu, E. Bernard and C. Brun.—p. 455.
Alopecia of Scalp. P. B. Photinos.—p. 456.

Pathogenesis of Arthritis Deformans.—Moulonguet and Mihailesco assert that they were able to produce in rabbits experimental lesions that were identical with those of arthritis deformans of man. In microscopic examinations of such lesions they had invariably noted minute particles of bone in the joint cavities. Accordingly they introduced pulverized bone into the joints of their experimental animals. It was immaterial whether this bone was fresh or had been previously desiccated, likewise whether it was heterogenous, homogenous or autogenous. The authors conclude that the action is therefore of a chemical nature as in several instances it was noted that growth recurred in a larger sequestrum which projected into the joint cavity. However, bone destruction was greater after the introduction of pulverized bone into the joint than was bone construction. The authors point to the danger of epiphyseal tears and also of surgical interventions by means of which pulverized bone can be introduced into the synovia. They advise that further research on this problem be made.

38: 537-552 (April 19) 1930

*Corymbose Syphilids of Scalp: Diagnosis. R. Sabouraud.—p. 537.
Rhinophyma: Treatment of the Condition by Electrical Coagulation. H. Bordier.—p. 538.
Rôle of Liver in Water Metabolism. P. L. Violle.—p. 539.

Corymbose Syphilids of Scalp: Diagnosis.—Sabouraud describes these lesions and discusses their differential diagnosis from herpes zoster, impetigo, acne varioliformis, epithelioma and tuberculosis. It is especially the last named disease with which they may easily be confused. Once the diagnosis has been established their prognosis is favorable, as they have not been known to recur after treatment, and coincident symptoms of involvement of the central nervous system have not been observed.

Schweizerische medizinische Wochenschrift, Basel

60: 381-404 (April 26) 1930

*Therapy of Uterine Myomas: Experiences in One Thousand Operations. A. Labhardt.—p. 381.
Epidemiology of Cerebrospinal Meningitis. H. Kapp.—p. 384.
Determination of Carbohydrate Content of Foods. B. Landa and K. Mezey.—p. 386.
Occupational Therapy for Patients with Tuberculosis. H. Voûte.—p. 387.
*Injuries of Eye Occurring in Skiing: Their Prevention. J. Strebel.—p. 391.
*Treatment of Snake Bites. J. Fallscheer-Zürcher.—p. 393.
Modification of Blood Produced by Injection of Spleen Extract in Tuberculosis. R. Herrmann.—p. 395.

Therapy of Uterine Myomas: Experiences in One Thousand Operations.—Labhardt thinks that from 20 to 25 per cent of uterine myomas do not require treatment. If the woman is close to the menopausal age and if the myoma is symptomless, neither surgical treatment nor irradiation is necessary. Myomas that cause slight hemorrhage may be treated with ergot preparations. However, if the menorrhagia is profuse, if the hemoglobin content is low and if the tumor is of considerable size, conservative therapy is not sufficient. Either irradiation or operation has to be resorted to. The author prefers surgical treatment to irradiation. He considers irradiation contraindicated in women who have not reached the menopause and also in cases in which inflammation or malignant degeneration is present. The author employed irradiation in 20 per cent of the cases and surgical treatment in the other 80 per cent. Comparison of the results of the two methods shows that operative treatment is more advantageous. Concerning the technic of the surgical treatment, the author states that he prefers the abdominal method to the vaginal. He further discusses when supravaginal amputation is advisable and when panhysterectomy is indicated. He describes the technic of supravaginal amputation, which was performed in more than 800 of 1,000 cases. If possible, the ovaries should be preserved. The author contests the assertion of other authors that, following extirpation of the uterus, the retained ovaries cause complications. In panhysterectomy the mortality is generally considerably higher than in supravaginal amputation. Nevertheless, in cases in which the myoma involves the entire wall of the cervix, panhysterectomy is necessary. The author emphasizes that before the operation all intra-uterine interventions such as curettage should be avoided, because they may lead to dissemination of infective material.

Injuries of Eye Occurring in Skiing: Their Prevention.—Strebel asserts that crushing and laceration of the tendons of the muscles of the eye are the most frequent injuries in skiing. Tearing of the tendon of the inferior oblique muscle often results in a permanent paralysis and narrows the field of vision. A crushing of the lateral rectus muscle with extravasation of blood under the conjunctiva and commotio retinae leads to temporary paralysis and other complications. However, they often disappear again spontaneously. Conditions are considerably more complicated when the bony walls are fractured and when the periosteum and Tenon's capsule are lacerated. Injuries in the region of the nasal canthus often result in a tearing of the lacrimal canal with subsequent lacrimation and chronic conjunctivitis. Occasionally the inferior oblique muscle is torn off and sometimes the accessory nasal cavities are opened. The latter injury may lead to sinusitis and to meningitis. If the blow from the ski stick is very severe, the optic nerve, the ciliary vessels and the medial rectus muscle may be lacerated and the entire eyeball is torn out. Most injuries of the eyes occurring in skiing are caused by the ski sticks. In order to avoid these traumas, the author emphasizes that only padded sticks should be used. He also stresses that the ski sticks should not be too long. Their length should not exceed that of an ordinary walking stick. Beginners should learn to ski without the aid of sticks.

Treatment of Snake Bites.—Fallscheer-Zürcher describes four cases of snake bites. Early and effective treatment prevented death in all instances. In one patient a carbuncle developed five weeks later in the scar of the snake bite, and death occurred five days later. As most significant for a successful treatment the author stresses the necessity of a quick local intervention to check the spreading of the poison. If snake bite serum and a solution of potassium permanganate are available they should be administered immediately. If possible, that part of the body affected by the snake bite should be tied off. Then the wound should be enlarged and tamponade with glycerin should be instituted. The latter procedure should likewise be resorted to if serum and potassium permanganate are not immediately available.

Archivio Italiano di Urologia, Bologna

6: 1-112 (March) 1930

Simple Rebellious Cystitis. G. Nisio.—p. 3.
Leiomyomas of Seminal Vesicles and of Vas Deferens, of Deformative Origin. C. Panà.—p. 29.
Resection of Urethra and Urethrorrhaphy. G. Esposito-Lavina.—p. 45.
Observations on Endovenous Pyelography. C. Hutter.—p. 67.
*Hemoglobinuria in a Patient Operated on for Appendicitis. A. Zaffagnini. —p. 71.

Hemoglobinuria in a Patient Operated on for Appendicitis.—Zaffagnini recalls that hematuria during the evolution of an appendicitis, although rare, is at least known, but his case of appendicitis in a boy, aged 10, which came to operation, is the only case in which he ever observed an attack of hemoglobinuria in a person operated on for appendicitis.

Nor was he able to find in the literature any reference to such a case. On the sixth day of a regular postoperative course, the stitches were removed; there was some pain and a temperature of 37.3 C. (99 F.), but otherwise there was nothing exceptional. In the afternoon the pains increased, and the patient had a chill, then suddenly turned pale and collapsed. Stimulants effected a partial recovery, though the pulse remained small and frequent. The temperature rose to 39 C. (102 F.). The urine was scanty and intensely hematic. Examination of the urine revealed: albumin, present (about 0.1 per cent); blood, Meyer test positive. In the sediment there were no blood cells, but the persistence of the blood tinge, uniformly distributed throughout the urine, was observed, and after long centrifugation hemoglobinuria was diagnosed. A hypodermoclysis of 250 cc. of physiologic solution of sodium chloride was given, and the ingestion of food by mouth was suspended for twenty-four hours. The following day the patient showed signs of icterus. The fever ranged between 38 and 38.5 C. (100.4 and 101.3 F.), but dropped to normal by lysis within ten days. The urine was no longer positive to the Meyer test, although hemoglobin and urobilin were present. A later examination revealed a completely normal urine and the patient was dismissed, fully recovered.

Clinica Chirurgica, Milan

33: 131-262 (Feb.) 1930

*Surgical Interventions in Vicious Fracture Consolidations. F. Cattaneo.—p. 131.
Acute Strumitis: Several Cases. M. Tabanelli.—p. 210.

Surgical Interventions in Vicious Fracture Consolidations.—Cattaneo reports the results in twenty-eight cases of badly consolidated fractures treated surgically. After having treated the question of osteosynthesis by means of metal reinforcement and the remote dangers associated therewith, the author favors such synthesis only in cases of absolute necessity, and solely with recoverable material, such as nails, metal plates, and the like.

Riforma Medica, Naples

46: 397-436 (March 17) 1930

*Syphilitic Angina Pectoris and Its Treatment. H. Schlesinger.—p. 399.
Influence of Vagus Nerve on Glycoregulation. E. Moretti and F. Peduzzi.—p. 402.
Echinococcus Cyst of Thyroid. A. Murri.—p. 403.
Interhuman Contagion and Prophylaxis. V. Delfino.—p. 406.

Syphilitic Angina Pectoris and Its Treatment.—Schlesinger brings out that, during the past twenty years, the conviction has been growing that syphilis is in many cases of great importance in connection with the origin and the manifestations of angina pectoris. The condition that improves under iodide treatment is not the vascular lesion as such but the syphilitic changes in the vessels. The author uses in the beginning sodium iodide in small doses (1 Gm. a day), administered internally, and he gives, possibly, later, from 5 to 10 cc. of a 10 per cent solution of sodium iodide. He avoids potassium iodide, much used in the past, because of its harmful action on the heart. A few days after beginning the iodide treatment, he starts to use insoluble preparations of bismuth. Or he prescribes a mercury preparation, such as mersalyl, in the form of injections. During the treatment, the urine must be controlled for albumin. If signs of renal changes develop, he discontinues the mercury and the bismuth but not the iodide. The results thus far secured are sufficiently good to encourage the continued use of antisyphilitic treatment.

Rivista di Clinica Pediatrica, Florence

28: 89-176 (Feb.) 1930. Partial Index

*Vernes Test for Early Diagnosis of Tuberculosis in Adults and in Children. A. Risi.—p. 98.
*Iso-Agglutinating Power of Human Milk and Candido's Test. F. Ferraro.—p. 123.

Vernes Test for Early Diagnosis of Tuberculosis in Adults and in Children.—Risi concludes from his experiments on receptive animals (guinea-pigs) that the Vernes reaction indicates the presence of tuberculosis. Children who were still negative to the Pirquet and Trambusti tests for tuberculosis, after having been treated with tuberculin, gave positive Vernes reactions. The photometric index of flocculation is in relation to the general evolution of tuberculosis. Children with acute infections (measles and whooping cough), with tuberculous cachexia (94.14 per cent), with the antiallergic condition that precedes tuberculosis, and with tuberculous meningitis, give a positive Vernes reaction, whereas with other reactions negative results are obtained. Hence, both in children and in adults, the Vernes seroflocculation test has diagnostic and prognostic value.

Iso-Agglutinating Power of Human Milk and Candido's Test.—Ferraro made about 100 iso-agglutination tests with milk from twenty-five normal women (in whom the absence of syphilis was proved serologically) and about 150 iso-agglutination tests with milk from sixteen syphilitic women. All these women were between the first and the fourteenth month of lactation. He concludes: Human milk exhibits the same iso-agglutinating behavior that blood serum does, and hence it follows the same laws of blood grouping that blood serum follows. Human milk retains its iso-agglutinating power even in the late months of lactation, and only in rare cases does this power appear to be decreased because of the small amount of iso-agglutinins in the milk. Milk from syphilitic women does not exhibit a special behavior to erythrocytes either of normal or of syphilitic persons. Milk from both normal and syphilitic women causes iso-agglutination, and this explains why the iso-agglutination that is observed in milk from syphilitic women is not due to the claimed content of specific agglutinins in milk because of syphilis, the iso-agglutination being the result of the content of iso-agglutinins in all human milk, regardless of any special pathologic condition. The author has modified Candido's technic somewhat. He uses the hanging drop method.

Tumori, Milan

4: 101-204 (March-April) 1930

Lesions Produced by Tar by Intravenous Route. C. Tedeschi.—p. 101.
*Basal Metabolism of Tumor Patients. D. Donati.—p. 126.
Primary Hemangiomas of Striated Muscles. T. Anardi.—p. 159.

Basal Metabolism of Tumor Patients.—In patients with a malignant tumor, Donati found a modification of the basal metabolism that was most marked as a result of the effects of a rapidly growing seminoma of the testis—namely, a diminution of from 10 to 15 per cent. He found a less notable lowering of the basal metabolism (less than 10 per cent) in patients with cancer of the breast. He found the values sensibly diminished also in two benign tumors. An increase in basal metabolism was observed only in sarcoma and lymphosarcoma and in myeloid leukemia. Radium therapy produced an increase of from 15 to 20 per cent in one case and no modification in a second case. The increase was present only the day after the application. Roentgenotherapy produced an increase of only from 6 to 10 per cent, a little less than that produced by radium therapy. The most marked increase was produced in myeloid leukemia; this increase was observed only the day of application, disappearing completely the second day. Febrile temperature produced an increase in basal metabolism, the increased values corresponding to about 15 or 16 per cent for each degree's increase in temperature (Van't Hoff).

Semana Medica, Buenos Aires

37: 897-960 (April 10) 1930

Importance of Ophthalmologic Examination in Diseases of Nervous System Necessitating Operation. M. Ibáñez Puiggari and M. Balado.—p. 897.
Rôle of Obstetrics in Physiologic and in Pathologic Conditions. J. B. González.—p. 910.
Syndrome of Acute Primary Orchitis Caused by Torsion of Ectopic Testis. F. Pozzo and A. E. Bianchi.—p. 919.
*Echinococcosis of Spine: Paraplegia Due to Compression of Spinal Cord. R. Dassen and J. C. Rey.—p. 921.
*Cirsoid Aneurysm of Inferior Colic Artery. C. Mesa.—p. 926.
*Treatment of Epileptic Patients. J. R. Monasterio Odena.—p. 935.
*Therapeutic Results with d'Herelle's Bacteriophage in Inflammatory Conditions. L. Rodriguez Echandia.—p. 939.
Prevention of Tuberculosis in Early Childhood. G. A. Schiavone.—p. 941.
Pyelography by Intravenous Injection of Urea Iodide. C. Heuser.—p. 953.

Echinococcosis of Spine: Paraplegia Due to Compression of Spinal Cord.—Dassen and Rey report a case in which a woman, aged 29, developed paraplegia of unknown origin. A diagnosis of compression of the spinal cord from hydatid cyst was made. Tests and roentgen examination confirmed the diagnosis. At operation a large hydatid cyst and many daughter cysts were found compressing the spinal cord. The operation yielded good results. Seen seven months after the operation, the patient was still improving. The nervous functions had been restored to normal, and free movements, libido and orgasm had returned. Only a slight diminution of the deep achilles tendon and patellar reflexes remained. From their observations, the authors conclude that paraplegia may indicate a compression of the spinal cord by an hydatid cyst. Intradermal hydatid reactions and Ghedini's tests should be made to discover the presence of echinococcosis. Positive results of these tests and roentgenograms showing the exact localization of the hydatid cysts are valuable to confirm the diagnosis. Hydatid cysts causing compression of the spinal cord necessitate surgical treatment. During the postoperative stage the development of scars should be carefully avoided. The wider knowledge of surgery of the spinal cord and the improvement of methods for diagnosis of spinal cord compression caused by hydatid cysts may prove that the condition is more frequent than is believed.

Cirsoid Aneurysm of Inferior Colic Artery.—In Mesa's patient, aged 19, an infra-umbilical paramesial laparotomy was performed for a grave condition accompanied by a syndrome of intense celiac pain, enterrorhagia, tachycardia and marked anemia. As a surprising operative observation a cirsoid aneurysm of the right inferior colic artery was noted. There was great vascular hyperplasia which caused the affected and adjoining tissues and the enteric border of the mesentery to appear as a congested area of dark red, which beat synchronously with the aneurysm. Ligatures were applied above and below the saccular part of the aneurysm. The pulsation of the tumor mass stopped. Eight months later the grave symptoms reappeared. A right hemicolectomy failed and the patient died. The author concludes that cirsoid aneurysm of the intestinal arteries as a rule is not discovered during life. It is either found during some operation or suspected just before death because of the appearance of a grave condition associated with enterrorhagia, syncope and other symptoms. The author believes that an endovascular infection following a grave typhoid was the etiologic factor in his case. Ligation above and below the aneurysm is a poor procedure. The only treatment should be hemicolectomy, if the condition of the patient permits, done in two stages.

Treatment of Epileptic Patients. — Monasterio Odena says that, since epilepsy is not a disease but a syndrome due to various causes, the treatment should be considered for epileptic patients and not for epilepsy. General treatment of epileptic patients comprises hygiene, diet and medicine. The author divides the treatment into two parts: treatment given during the convulsions and treatment of the causative or etiologic conditions that cause the attacks. The author describes the treatment that should be used during the convulsive crisis. He considers the subcutaneous or rectal administration of soluble barbital of great value. The treatment of the disease that is the causative factor of the epileptic crisis is of paramount importance. Thus, if the epileptic patient has syphilis or tuberculosis, he should receive antisyphilitic or antituberculous treatment. If medical treatment fails and a traumatic origin is proved (fractures of skull, compression because of hemorrhages, scars, and so on) as well as in those cases in which the convulsions are caused by cerebral or meningeal tumors, abscesses or cysts, surgery is the only treatment and may be followed by complete recovery.

Therapeutic Results with d'Herelle's Bacteriophage in Inflammatory Conditions. — Rodríguez Echandía obtained good results from bacteriophage treatment in peritonsillar abscess, furuncle of the auditory canal, chronic sinusitis of the maxillary and ethmoid sinuses, bronchial asthma and rhinitis.

Archiv f. exper. Pathologie u. Pharmakol., Leipzig

150: 1-132 (April) 1930

Fermentative Splitting of Acetylcholine in Blood and Its Inhibition by Physostigmine. E. Engelhart and O. Loewi.—p. 1.
Digitalis: Cumulative Action in Warm-Blooded Animals. H. Weese.—p. 14.
*Epinephrine Treatment by Inhalation. W. Heubner.—p. 21.
*Expectorants: Action on Ciliated Epithelium. M. Kochmann.—p. 23.
*Lead: Prevention of Absorption from Gastro-Intestinal Canal. S. Miyasaki.—p. 39.
Excretion of Alcohol and Ether by Kidneys. A. Bornstein and G. Budelmann.—p. 47.
*Fresh Defibrinated Blood: Pharmacologic Action. K. Zipf and E. Wagenfeld.—p. 70.
*Active Principle of Fresh Defibrinated Blood: Preparation. K. Zipf and E. Wagenfeld.—p. 91.
Powder of Anterior Lobe of Hypophysis: Effect on Ovaries of Immature Rats and Rabbits. A. Loeser.—p. 106.
Active Principle of Fresh Defibrinated Blood: Action on Surviving Organs. E. Haake.—p. 119.

Epinephrine Treatment by Inhalation.—Heubner challenges Anthony's contention that there is a fundamental difference between inhalation and intratracheal injection and that in injection a drug can reach the alveolar tissue of the lung more readily and therefore be better absorbed than on the bronchial mucosa. He emphasizes the extremely rapid absorption of medicaments by the bronchial mucosa and states that he has demonstrated that, with a suitable apparatus and concentration, the general actions of epinephrine may be obtained by inhalation.

Expectorants: Action on Ciliated Epithelium.—Kochmann describes experiments in which he demonstrated on pieces of surviving cilated epithelium from a frog's pharynx that many expectorants (sodium iodide, ammonia, ammonium chloride, emetine hydrochloride, and volatile oils) stimulate ciliated epithelium at a concentration within the limits of their therapeutic administration. Others, as apomorphine hydrochloride, do not affect the ciliated epithelium.

Lead: Prevention of Absorption from Gastro-Intestinal Canal.—From experiments on mice, Miyasaki concludes that the absorption of lead from the gastro-intestinal canal is to be considered as a simple process of diffusion. In a given interval of time there is always absorbed a definite percentage of the metal present in the gastro-intestinal canal, regardless of the absolute amount of lead ingested. The absorption of lead from the gastro-intestinal canal is delayed by the administration of solution of dialyzed iron or of milk. He explains the action of milk on the basis of its phosphate content and the formation of a colloidal lead phosphate.

Fresh Defibrinated Blood: Pharmacologic Action.—In a study of the pharmacologic action of fresh defibrinated blood from one rabbit on another rabbit, Zipf and Wagenfeld noted that small doses (from 1 to 5 cc.) produced a drop in blood pressure. At the same time there occurred a moderate dilatation of the cutaneous blood vessels, narrowing of the blood vessels of the splanchnic area, congestion of the liver, and an increase in the volume of the lungs. The effect on the heart consisted of an enlargement of the cardiac amplitude, an increase in the volume of the right ventricle, a decrease in the volume of the left ventricle, and no important modification of the frequency of the heart beat. Large doses caused marked disturbances in the activity of the heart. Small doses of fresh defibrinated blood were without effect on the respiration, but large doses produced paralysis of the respiratory center. Fresh defibrinated blood contains a capillary poison; its hypotensive action cannot be counteracted by atropine or bilateral vagotomy. Epinephrine and the pressor substance of the hypophysis inhibit or suppress the depressor action of fresh defibrinated blood. The drop in blood pressure and the accompanying phenomena are explained perfectly by the experimentally demonstrated inhibition of the flow of blood from the lungs.

Active Principle of Fresh Defibrinated Blood: Preparation.—Zipf and Wagenfeld have prepared the active principle of fresh defibrinated blood by three different methods for removing protein; namely, by precipitation with solution of dialyzed iron, by precipitation with congo red and hydrochloric acid, and by ultrafiltration.

Archiv für Verdauungs-Krankheiten, Berlin

47: 163-304 (April) 1930

Gastric Contents: Determination of Mucus. G. Kelling.—p. 163.
Id.: Fractional Withdrawal. K. Ballowitz.—p. 169.
*Gallbladder Reflex. N. W. Kusnezow and S. I. Michailowa.—p. 199.
*Cholecystitis: Effect on Motor Functioning of Gastro-Intestinal Tract. S. O. Badylkes and F. I. Strokow.—p. 222.
*Gastric Achylia: Presence of Pepsin in Urine. J. A. Rothschild.—p. 232.
Chronic Infiltrative Inflammation of Large Intestine on Basis of Diverticulitis. W. Bauermeister.—p. 242.
Roentgen Changes in Syphilis of Stomach. J. G. Schliffer.—p. 246.
*Ulcer of Stomach: Treatment with Silver Nitrate. F. J. Semskow.—p. 268.

Gallbladder Reflex.—Kusnezow and Michailowa report the results they obtained in a study of the "visible reflex" of the gallbladder in 18 healthy persons and in 140 persons with various pathologic conditions. The reflex was present 8 times and absent 10 times in the 18 normal persons, present 22 times and absent 23 times in 45 persons with cholecystitis, present 3 times and absent 10 times in 13 persons with cirrhosis of the liver, present 6 times and absent 10 times in 16 cases of catarrhal jaundice, present 2 times and absent 2 times in 4 persons with cancer of the pancreas, present 3 times and absent 5 times in 8 persons with diabetes mellitus, present 11 times and absent 9 times in 20 persons with ulcer of the stomach, and present 6 times and absent 26 times in 32 persons with gastro-intestinal diseases. On the basis of these observations the authors believe that the conception of many investigators with regard to the so-called gallbladder reflex is too schematic.

Cholecystitis: Effect on Motor Functioning of Gastro-Intestinal Tract.—In sixteen dogs with experimentally produced cholecystitis, Badylkes and Strokow noted the following disturbances in the functioning of the gastro-intestinal tract: total gastrospasm, pylorospasm, retarded evacuation of stomach, increased tonus of the stomach, hyperperistalsis of the small intestine and retarded evacuation of the large intestine. In 30 per cent of the dogs the motor activity of the gastro-intestinal tract remained normal. The authors emphasize the fact that their observations present experimental proof of the existence of viscerovisceral reflexes.

Gastric Achylia: Presence of Pepsin in Urine.—In nearly all of five cases of achylia in persons with cancer and ten cases of achylia simplex, Rothschild succeeded in demonstrating the presence of small quantities of pepsin in the urine. In none of six cases of achylia in pernicious anemia, on the contrary, did he find any pepsin in the urine.

Ulcer of Stomach: Treatment with Silver Nitrate.—In the treatment of gastric ulcer Semskow prescribes, in addition to rest in bed and a bland diet, one teaspoonful of a 0.1 : 200 solution of silver nitrate two or three times daily one-half hour before meals. Under this treatment the eructations and heartburn soon cease and the patients feel better, frequently much better than they do under prolonged alkalization of the gastric juice. Improvement in the general condition of the patients following the administration of silver nitrate has been noted also by Johnson, Gerhardt, Leo, Boas and Elsner. Although he has obtained good results with this form of treatment, Semskow still believes that the most important factors in the treatment of persons with gastric ulcer are rest in bed and a suitable diet.

Medizinische Klinik, Berlin

26: 613-648 (April 25) 1930

Functional Disturbances in Vestibule of Ear and Its Sequelae: Seasickness and Its Treatment. O. Bruns.—p. 613.
Hypoglycemic Conditions in Their Relation to Neurology and Psychiatry. J. Wilder.—p. 616.
Increased Incidence of Thrombosis and Embolism. Nürnberger.—p. 621. C'cn.
Sanitary Precautions in Mining Radium in Joachimsthal. R. Ziel.—p. 623.
*Behavior of Blood Pressure in Mental Exertion. R. Fischer.—p. 625.
*Diagnostic Significance of Cancer Metastases in or Directly Underneath the Skin. P. Uhlenbruck and E. Gilardone.—p. 627.
Late Results of Surgical Treatment of Chronic Gastritis. Finsterer.—p. 628. C'cn.
Experiments for Comparison of Efficacy of Extract from Cardiac Muscle and of Extract from Skeletal Muscles. L. Haberlandt.—p. 631.

Behavior of Blood Pressure in Mental Exertion.—In order to determine whether mental exertion influences the blood pressure, Fischer made experiments on sixteen chess players. Some of them were professionals and others amateurs. The maximal arterial pressure and the pulse rate were determined before and after the games, which generally lasted from four to five hours. A tabular report listing the blood pressure of the various players shows that the mental exertion during these games does not increase the blood pressure. Difficult chess problems, the solution of which required several minutes, were also given to the players. Here again the influence on the blood pressure was negligible. In discussing the pathogenesis of hypertension the author expresses the opinion that frequently repeated temporary hypertension may finally lead to permanent hypertension. Mental exertion was considered by many as a cause of temporary increased blood pressure. However, experienced clinicians were usually of the opinion that psychic excitation has a greater influence on the arterial pressure than mental exertion. The author thinks that work which involves great responsibilities causes psychic excitation and that the latter leads to hypertension more easily than mental exertion as such.

Diagnostic Significance of Cancer Metastases in or Directly Underneath the Skin.—According to Uhlenbruck and Gilardone, the reports in the literature on the formation of cancer metastases in the skin are rare. Extensive statistics sometimes do not list a single case. The authors observed four cases of disseminated carcinomatosis of the skin within two years. Observations on these cases convinced them of the clinical and diagnostic significance of these tumors. They think that cancer nodules underneath the abdominal skin are usually lymphogenic metastases of abdominal tumors. Hematogenic isolated metastases on the chest, abdomen or back are frequently the beginning stage of disseminated carcinomatosis.

Mitteilungen a. d. Grenzgebieten d. Med. u. Chir., Jena

41: 627-750 (April 25) 1930

*Acute Dilatation of Stomach: Treatment. P. I. de Bruïne Ploos van Amstel.—p. 627.
Chronic Rigidity of Spinal Column. H. Gramann.—p. 637.
*Fatal Gastric Hemorrhage: Unusual Cause. A. Feller.—p. 670.
*Thyroidectomy in Acromegaly. B. Kaufmann.—p. 679.
Lithopedion: Case. O. Reichelt.—p. 683.
*Nicotinism: Pathologic Changes in Vascular System. A. S. Kosdoba.—p. 687.
Blood Transfusion: Effect on Functioning of Bone Marrow. B. Bogdanov, O. Beljajeva and J. Majanz.—p. 700.
Insulin Shock in Cretins. W. Lauterburg.—p. 715.
*Effect of Bile on Secretion of Gastric Glands Following Cholecystogastrostomy. A. Manuilow.—p. 733.

Acute Dilatation of Stomach: Treatment.—De Bruïne Ploos van Amstel reports two cases of acute dilatation of the stomach following a blow on the abdomen; the apparently hopeless condition of both patients was improved immediately by placing them in the Schnitzler abdominal position. The vomiting stopped and the distention of the abdomen disappeared. The author believes that all other therapeutic measures, as gastric lavage, gastrotomy, laparotomy, jejunostomy, gastroenterostomy, duodenojejunostomy, puncture of the dilated stomach, medicinal treatment with morphine, apomorphine, atropine, strychnine and epinephrine and sodium chloride infusions, are valueless. He also believes that all the later modifications of the Schnitzler position as the right-sided position (Malbranc, Robinson), the left-sided position (Kelling), the knee-elbow position (von Herff, Stieda, Bäumler) and the high pelvis position (Wichern, Hochenegg) are unnecessary.

Fatal Gastric Hemorrhage: Unusual Cause.—Feller reports a case of fatal gastric hemorrhage in a man, aged 27, in whom postmortem examination revealed a mycotic aneurysm of the anterior wall of the abdominal aorta that had ruptured into the stomach. In a review of the literature the author was unable to find the report of a similar case.

Thyroidectomy in Acromegaly.—Kaufmann reports a case of acromegaly in combination with goiter in which removal of the latter, because of mechanical interference with respiration, was followed by an arrest in the progress of the acromegaly and an improvement in the subjective condition of the patient.

Nicotinism: Pathologic Changes in Vascular System.—Kosdoba describes the pathologic changes in the vascular system of twenty-one otherwise healthy rabbits, aged from 3 to 13 months, that were given intravenous injections of nicotine for a long time. The macroscopic changes noted were plaques, aneurysmal dilatations, and roughness and induration of the wall of the aorta and its large branches. Microscopically, in the adventitia thickening, hemorrhages, enlargement of the lymphatic spaces and dilatation of the vasa vasorum were present, in the media necrotic areas in various stages of development and calcium plaques surrounded by connective tissue, and in the intima swelling and desquamation and fatty degeneration of the endothelium. In female rabbits the pathologic changes in the blood vessels were much more marked than they were in male rabbits given the same amount of nicotine.

Effect of Bile on Secretion of Gastric Glands Following Cholecystogastrostomy.—Manuilow gives the results of experiments that he performed on cholecystogastrostomized dogs with a Pavlov stomach to study the effect of cholecystogastrostomy, as recommended by Bogaras for the treatment of ulcer of the stomach, on the secretion of the gastric glands. Bile introduced into the empty stomach caused a profuse secretion of gastric juice. Bile from carnivorous animals caused a greater secretion of gastric juice than did bile from herbivorous animals. The bile passing through the cholecystogastrostomy opening into the stomach during digestion acted on the secretion in different ways depending on the kind of food. After a meal of meat and fat it increased the amount of secretion and the acidity. After the ingestion of bread it decreased the amount of secretion and the acidity for the first four hours of gastric digestion, but during the following hours it increased them above the normal amounts. The fermentative power of the gastric juice was decreased by the action of the bile together with all the kinds of food tested. The author believes that cholecystogastrostomy causes indirectly an overproduction of bile by the liver cells and that this is sometimes harmful. He therefore advises against it in the treatment of ulcers of the stomach and duodenum.

Münchener medizinische Wochenschrift, Munich

77: 657-706 (April 18) 1930. Partial Index

Contributions to Medical Science from the Surgical Clinic of the University of Berlin: II. A. Bier.—p. 657.
*Clinical Results of Transplantation of Testes from Monkeys into Man. E. Schleyer.—p. 664.
*Diagnosis and Therapy of Pernicious Anemia. H. Lenhartz.—p. 669.
*Removal of Advanced Malignant Tumors by Means of Surgical Diathermy and by Electrical Coagulation. H. von Seemen.—p. 675.
Development and Pathognomonic Significance of Striae Cutis Distensae. H. Dekker.—p. 677.
Gas Permeability of Living Skin in Gas Baths and in Carbon Dioxide Water Baths. F. Salzmann.—p. 679.
Experimental Production of Urinary Calculus. S. Perlmann and W. Weber.—p. 680.
Endolumbar Injection of Diphtheria Serum. S. Wolff.—p. 681.

Results of Transplantation of Testes from Monkeys into Man.—Schleyer mentions several authorities who investigated the practicability of transplantation of testes. He describes in detail Voronoff's observations and experiments. The author studied the method which Voronoff found to be the most effective and employed it in nine cases. He comes to the conclusion that by transplanation of testis tissues from apes it is possible to overcome certain manifestations of senility in man. In most instances the libido and the potentia generandi are restored. The transplanted tissue usually disintegrates after a certain time. However, if Voronoff's method is employed, it is preserved for a considerable length of time. This operation differs from most others in that no lesion is made on the testes of the patient. An incision 4 cm. in length is made into the integument of the scrotum, and pocket-like openings are made between the tunica vaginalis communis and the tunica vaginalis propria on each side of the testis. The latter tunic is then scarified in order to produce a traumatic inflammation. However, care should be taken that the vessels are not injured. A section of the animal testis about 2 cm. long and 0.5 cm. thick is fastened with catgut to the scarified surface of the tunica vaginalis propria on each side of the testis. Then the tunica vaginalis communis is closed. The other testis is subjected to the same procedure and the scrotum is closed again. The first two or three days after the operation, the patient has fever. On the sixth day the sutures may be removed. The duration of the effectiveness of the transplanted tissue varies in the different patients. In one case the preoperative status returned eight months later. In other cases the good effects are still present after two years. In one patient, aged 76, whose general health was poor, the operation was a complete failure. When the transplanted tissue is no longer effective, the operation may be repeated without harm to the patient. In explaining the mode of action of this therapy the author states that the transplanted tissue influences the organism either by its own hormones or by those hormones that become free as a result of the resorption. These hormones stimulate the hormonal production of the testes. The resorbed proteins have the effect of a shock therapy and stimulate the other endocrine glands. To insure favorable results, the operation should be done as early as possible.

Diagnosis and Therapy of Pernicious Anemia.—The study of several cases of pernicious anemia induced Lenhartz to formulate the following rules concerning the diagnosis and treatment of this condition: 1. Because an early diagnosis of the disease is of the greatest significance, the possibility of pernicious anemia should be thought of and the blood should be examined. 2. In cases which present the clinical aspects of pernicious anemia but in which the anemic blood picture is not present, liver therapy should be instituted nevertheless and continued for at least four weeks. 3. Besides liver preparations the patient should receive fresh liver either daily or at least twice a week. The author also advocates the administration of pepsin hydrochloric acid. Treatment with fresh liver is indicated whenever liver extracts of the same derivation have a different effect. 4. The feces should be examined for helminths, and even in case of negative results an anthelmintic treatment should be instituted. 5. Following discharge from the hospital the patient should be under continuous clinical and hematologic observation. 6. The absolute necessity for liver therapy should be impressed on the patient.

Removal of Advanced Malignant Tumors by Means of Surgical Diathermy and by Electrical Coagulation.—Von Seemen describes the general principles and the technic of surgical diathermy in the treatment of malignant growths. His treatise shows that many inoperable, recurrent and ineffectively irradiated tumors may be removed either with the diathermic knife or by coagulation. His experiences proved likewise that the results of the surgical removal of operable tumors may sometimes be improved by employing diathermy for certain phases of the operation, the diathermic surgery being especially helpful in the prevention of recurrences. The author considers the main advantages of surgical diathermy and of electric coagulation to be the hemostatic effect, the possibility of sterilization of infected areas, the prevention of dissemination of tumor tissues, and the slight shock effect. He emphasizes that this procedure should not be employed to the exclusion of other methods but he thinks that diathermic surgery and coagulation will be effective in those advanced cases of cancer in which formerly only symptomatic treatment could be employed.

Virchows Archiv f. path. Anat. u. Physiol., Berlin

277: 1-310 (April 15) 1930

*Racemose Sarcoma of Vagina with Metastases in Lung. M. Dugge.—p. 1.
Primary Sarcoma Originating in Reticulo-Endothelium of Lymph Node. F. Roulet.—p. 15.
Pathology of Tumors with Morphogenetic Influences. W. Arnold, J. Koerner and E. Mathias.—p. 48.
*Fractures: Action of Roentgen Rays on Callus Formation. S. Fukase.—p. 69.
Changes in Liver in Tuberculous Processes at a Distance from It. H. Guillery.—p. 93.
*Relation Between Tuberculosis of Skin and Tuberculosis of Internal Organs. S. S. Wail.—p. 115.
Actinomycosis of Stomach and Liver in Man: Case. S. Derischanoff.—p. 130.
*Relation Between Rabbits' Color and Their Susceptibility to Tar Cancroid. T. Suzuki.—p. 139.

Disintegration of Blood Histocytes. C. Clasing.—p. 143.
Experimental Hematoporphyrosis of Bones. H. Hammer.—p. 159.
Fatal Poisoning by Gaseous Nitrogen Oxide in Workers with Nitric Acid. O. Schultz-Brauns.—p. 174.
Changes Produced in Internal Organs by Parenteral Administration of Autogenous Protein. W. Jelin.—p. 221.
Odontomas: Pathology. A. W. Rywkind.—p. 228.
*Thrombosis of Inferior Vena Cava. W. Eilers.—p. 248.
Pararenal and Perirenal Hemorrhages: Pathologic Anatomy. P. Heilmann.—p. 256.
Effect of Quartz Lamp Irradiation on Tissue Cultures. E. Mayer.—p. 263.

Racemose Sarcoma of Vagina with Metastases in Lung.—Dugge reports a typical case of racemose sarcoma of the vagina with secondary infiltration of the bladder in a child, aged 1½ years. Postmortem examination revealed, in addition to the usual metastases in the regional lymph nodes, five subpleural metastases. Microscopic examination of the tumor showed among the spindle cells a few transversely striated embryonic muscle fibers.

Fractures: Action of Roentgen Rays on Callus Formation.—Fukase reports the results of experiments on eighty-four young rabbits in which both fibulas were broken subcutaneously under anesthesia and immediately afterward one of the two fractures was subjected to roentgen irradiation. He found that irradiation with doses so large (1,600 r) that they would have injured human tissues caused a complete inhibition of the activity of the osteoblasts for three weeks. Instead of newly formed bone there appeared a peculiar, hard connective tissue whose cells resembled bone cells. After an interval of three weeks there appeared in this avascular connective tissue large blood vessels about which there occurred an intense new formation of bone. Despite this, however, the healing of the fracture ended later than on the nonirradiated side. By irradiation with moderate doses of roentgen rays, the amount of callus was decreased somewhat but nevertheless the irradiated fractures healed sooner than did the nonirradiated ones. Roentgen examination revealed that in the fractures subjected to moderate doses of roentgen rays the calcification began earlier and the replacement of the temporary callus ended sooner than they did in the nonirradiated fractures. Macroscopic examination of the bones of the killed animals revealed that in the fractures irradiated with moderate doses of roentgen rays the bone scar was less vascular and contained more calcium. Microscopic examination showed that in the irradiated fractures the initial traumatic inflammation was less marked and the granulation cells became spindle shaped and formed fibrils sooner than they did in the nonirradiated fractures. The formation of new blood vessels was less marked on the irradiated side and the callus was smaller, but its structure was unchanged. On the irradiated side the newly formed bone was covered by a thicker periosteum; the latter, however, did not present the usual bundle form but consisted of an irregular network with interlacing connective tissue fibers and few nuclei; this change was characteristic of the previous roentgen irradiation. The author believes that, since all the cells concerned in ossification may be transformed into connective tissue cells by roentgen irradiation and after a latent period of several weeks become active again in ossification, all connective tissue cells possess the capacity to form bone.

Relation Between Tuberculosis of Skin and Tuberculosis of Internal Organs.—In inoculation experiments on several guinea-pigs and three monkeys Wail noted that, in animals in which marked tuberculous changes in the skin occurred, the corresponding changes in the internal organs were less severe than they were in animals in which the tuberculous changes in the skin were slight and of short duration.

Relation Between Rabbits' Color and Their Susceptibility to Tar Cancroid.—According to Suzuki, the reaction of the skin to tar is more marked and the development of tar cancer is more frequent in white rabbits than in black ones.

Thrombosis of Inferior Vena Cava.—Eilers reports a case of primary thrombosis of the inferior vena cava and secondary bilateral thrombosis of the renal and suprarenal veins with bilateral hemorrhagic infarction of the kidneys and suprarenals. Microscopic examination revealed advanced organization of the thrombus in the inferior vena cava. The author believes that the thrombosis of the inferior vena cava in this case is to be explained on the basis of an infectious process in the region of the umbilicus and that the case is therefore an example of an infectious thrombosis at a distance.

Wiener klinische Wochenschrift, Vienna

43: 481-512 (April 17) 1930

Beauty and Expression of Eye. R. Seefelder.—p. 481.
Disturbances in Radio Reception Caused by Electromedical Apparatus: Device for Prevention. J. Kowarschik.—p. 485.
Physiology of Sympathetic Centers. L. Hess and J. Faltitschek.—p. 488.
Case of Fistula Cervicolaqueatica. J. Malfatti.—p. 492.
Etiology, Therapy and Pathogenesis of Prurigo: Indications of Existence of Special Pruritus Nerves. Schürer-Waldheim, Sr.—p. 494.
*Effect of Administration of Calcium on Adynamia in Patients with Pulmonary Tuberculosis: Method for Determination of Fatigability. H. Stein.—p. 496.
Clinical Aspects and Treatment of Ovarian Disorders. P. Werner.—p. 497.

Administration of Calcium on Adynamia in Patients with Pulmonary Tuberculosis: Method for Determination of Fatigability.—Stein investigated adynamia in patients with pulmonary tuberculosis. He found that fatigue of the eyes indicates the general adynamia of the organism. He describes a simple method by which the degree of fatigability can be determined. Stimulated by the reports of other authors who observed good results from the administration of calcium in persons who were easily fatigued, the author introduced medication with calcium preparations to counteract the adynamia in patients with pulmonary tuberculosis. He tested the efficacy of calcium chlorate and of the calcium lactate. The most favorable results were obtained with a preparation containing calcium lactate and sodium lactate.

Zeitschrift f. Hygiene u. Infektionskr., Berlin

111: 143-300 (April 17) 1930

*Increase in Death Rate of Infants During First Week of Life, in Breslau. H. Lubinski and G. Cosack.—p. 143.
*Resistance to Lead. Weyrauch.—p. 162.
Coli-Aerogenes Group of Bacteria: Basic Types. I. E. Minkewitsch.—p. 180.
Trypanosomiasis in White Mice: Abortive Cure. W. A. Collier and M. Krause.—p. 191.
Plague: Epidemiologic Study. A. A. Tschurilina.—p. 198.
Stanley and Reading Paratyphoid Bacilli: Occurrence in Germany. F. Kauffmann.—p. 210.
Paratyphoid Group of Bacilli: New Serologic Types. F. Kauffmann.—p. 221.
Types of Bacilli in Typhoid-Paratyphoid Group: Differentiation by Means of Antigens. F. Kauffmann.—p. 233.
Id.: Differentiation by Means of Cultivation. F. Kauffmann.—p. 247.
*Effect of Scarcity of Alcohol on Death Rate. R. Bandel.—p. 256.
Formation of Antibodies in Subarachnoid Space. D. A. Schamburov.—p. 278.
Paratyphoid C and Paratyphoid N Bacilli: Cultural and Serologic Characteristics. W. Stieben and M. Maksianowitsch.—p. 288.

Increase in Death Rate of Infants During First Week of Life, in Breslau.—Lubinski and Cosack report the results of a study of the death rate of infants in Breslau during the three years from 1911 to 1914 and from 1925 to 1928. They found that the percentage of deaths in infants during the first week of life showed an increase for the latter period. The increase was in part a relative one, caused by the considerable decrease in the death rate of infants more than 1 week of age, and in part an absolute one. The death rate of infants of unmarried parents, both before and after the Great War, was higher than the death rate of legitimate infants; moreover, the postbellum increase in the death rate of infants during the first week of life was considerably higher in illegitimate children. The authors believe that the increase in the death rate of infants during the first week of life is explained only in part by the relative increase in the number of first pregnancies because the death rate of the first-born is lower than the death rate of any other group of infants born subsequently. The main cause is apparently a relative increase in the number of infants born among the lower classes.

Resistance to Lead.—In a study of the absorption of lead and its distribution in rabbits, Weyrauch found that some of

the animals were refractory to lead and that there exists a kind of congenital resistance to this metal. He emphasizes the importance of lead absorbed from the gastro-intestinal tract as compared with lead absorbed from the respiratory tract.

Effect of Scarcity of Alcohol on Death Rate.—In comparative statistical studies of the death rate of married and unmarried men in Bavaria, Berlin and Budapest and of Jews and Gentiles in Prussia, Berlin and Budapest, Bandel found that the greatest decline in the death rate of unmarried men and of male Gentiles had occurred during years in which, either because of war or of bad economic conditions, there was a scarcity of alcohol. These facts, combined with the fact that married men drink less than unmarried men and that Jews drink less than Gentiles, constitute another argument in support of the contention that the decrease in the male death rate during the first few years following the Great War was a result of the decreased consumption of alcohol and that there is a close relation between the consumption of alcohol and the male death rate.

Zentralblatt für Chirurgie, Leipzig

57: 1009-1072 (April 26) 1930

Disturbances of Respiration During Tribromethanol Anesthesia: Prophylaxis and Treatment. W. Anschütz.—p. 1010.
Parotitis and Pancreatitis: Etiologically Related Diseases. V. Schmieden and O. Voss.—p. 1017.
*Surgical Treatment of Severe Mediastinal Emphysema. R. Nissen.—p. 1023.
Operation for Vertebral Aneurysm. H. Küttner.—p. 1025.
False Traumatic Aneurysm of Gastroduodenal Artery. F. Starlinger.—p. 1034.
*Intestinal Disorders Following Madlener's Operation for Gastric Ulcer. F. König.—p. 1036.
*Hemangioma of Small Intestine: Case. A. Kortzeborn.—p. 1042.
Dissipation of Anesthetic Vapors from Operating Rooms. N. Guleke.—p. 1048.
*Etiology of Free Joint Bodies. G. Sultan.—p. 1049.
Treatment of Torn Extensor Tendons of Terminal Phalanges. H. Schloffer.—p. 1053.
Perforation into Trachea of Gauze Sponges Ten Months After Thyroidectomy. H. Junghanns.—p. 1055.

Surgical Treatment of Mediastinal Emphysema.—Nissen directs attention to the fact that in cases of severe injury of lung tissue there is always likelihood of the development of mediastinal emphysema. The symptoms caused thereby are similar to those of compression of the heart—or what the author terms extrapericardial heart tamponade. Death may occur as the result of compression of the intramediastinal branches of the vena cava and the right auricle. An immediate operation is indicated. In a case cited, the author opened up the mediastinum throughout its entire extent. The patient recovered.

Intestinal Disturbances Following Madlener's Operation for Gastric Ulcer.—König calls attention to the fact that, following any severe operation on the stomach, digestive disturbances may supervene, especially diarrhea, and that death may ensue. The cause lies entirely in the realm of bacteriology. In the absence of acid fluids in the stomach, pathogenic bacteria develop in excess and without hindrance, enteritis follows, and finally death. Lavage and drug treatment failed to check the progress of the disturbance, but adsorption therapy proved effective in the author's experience. He administered a combination of silver chloride and silicic acid, which checked the diarrhea within a few days.

Hemangioma of Small Intestine.—Kortzeborn relates that a man, aged 41, who had always been in excellent health, suddenly noted loss of strength and began to feel miserable. He suffered from headaches, and his color was a sickly yellow. Then he observed blood in his stool on several occasions. He was given iron preparations and ordered to bed. Improvement followed. After a while he had a severe bleeding from the bowel, became unconscious, and was taken to the hospital. The diagnosis wavered between pernicious anemia and gastric ulcer until an unusually large quantity of bright red blood was passed without any preceding stomach symptoms. The patient then stated that at times he had a feeling as though his abdomen were "blowing up." The existence of pain around the umbilicus was also admitted. A laparotomy was performed. About 75 cm. distant from the ileocecal valve, in the wall of the ileum, a tumor the size of an apricot was discovered. Entering this tumor from the mesentery was an artery the size of a lead pencil, with an accompanying vein. About 25 cm. of the ileum was resected and a side to side anastomosis made. On examination, the tumor proved to be a hemangioma, the first, of its kind it is said, to be recorded. The blood spaces or lakes extended into all coats of the bowel, including the mucosa; hence the many severe hemorrhages and the failure of ileus to develop.

Etiology of Free Joint Bodies.—Sultan relates two cases in which the usually ascribed etiology did not seem to be sufficiently acceptable. Reviewing these and other reported cases, he concludes that the formation of free joint bodies must necessarily rest on an embryologic or hereditary basis and that such a belief will account for these bodies as well as well developed chondromatoses from the synovia.

Nederlandsch Tijdschrift voor Geneeskunde, Haarlem

74: 1837-1960 (April 12) 1930

Injury of Knee Joint. W. J. Gerber.—p. 1838.
*Postvaccinal Encephalitis: Cases. E. C. van Rijssel.—p. 1847.
*Reliability of Aschheim-Zondek Pregnancy Test. P. L. Stal.—p. 1862.
Significance of "Metalix" Roentgen Tube in Pulmonary Roentgenography. A. Daan.—p. 1873.

Postvaccinal Encephalitis.—Van Rijssel's research on a number of deaths from involvement of the central nervous system following vaccinations with cowpox vaccine led him to these conclusions: Only when the clinical examination is supplemented by a thorough anatomic examination can one conclude, in cases of death after vaccination, that there is a causal connection between the two events. Such a conclusion based on clinical evidence alone is dangerous and may give rise to serious errors. Although it is true that the clinical aspects of epidemic encephalitis and postvaccinal encephalitis, during the past two years, have come to resemble each other more, the differences in the microscopic observations and the localization are such that the diseases cannot be regarded as identical. The characteristic "softening" or microglia proliferation about the blood vessels of the white substance of the central nervous system resembles the action of a toxic substance. The abnormalities in the spinal cord in postvaccinal encephalitis are at least just as serious as those of the brain, if not more so. As to the theory that postvaccinal encephalitis may be due to the activation of a virus previously existing in the body of the patient, his research brought out no evidence that tended to disprove such a theory. In an examination into a death with brain symptoms following cowpox inoculation, one must bear in mind that the interval between the inoculation and the onset of the new disorder may be weeks but not months. Cases of postvaccinal encephalitis occur after revaccination as well as after primary vaccination. The contention that a child should not be vaccinated soon after recovery from an infectious disease (especially whooping cough) found support in one of the cases investigated.

Reliability of the Aschheim-Zondek Pregnancy Test.—Stal found the technic of the Aschheim-Zondek pregnancy test quite simple. Sometimes it is inconvenient, because the reaction requires so much time. The most objectionable feature, however, is that a rather extensive mouse raising establishment is necessary in order to have always on hand mice weighing from 6 to 8 Gm., since heavier mice may present spontaneously reactions II and III. It is eminently desirable to apply the test to five mice, the number recommended by Aschheim and Zondek; otherwise the conclusion that the outcome is negative appears unjust. In pathologic pregnancies, a positive outcome of the test gives no indication as to whether or not the fetus is living; but a negative outcome is an indication that the embryo is dead. Of 461 specimens of urine of women known not to be pregnant, the test proved negative in 450, or 97.6 per cent. Of 444 specimens of urine of women known to be pregnant, the test proved positive in 435, or 98 per cent. The author concludes therefore that the Aschheim-Zondek test is reliable if the pregnancy has existed more than four weeks, the proportion of accuracy (97 to 98 per cent) surpassing other well known tests.